

BIRLA CENTRAL LIBRARY

PILANI (Rajasthan)

Class No:- 581.15/252

Book No:- D164C55

Accession No:- 50508

CHROMOSOME ATLAS OF FLOWERING PLANTS

by C. D. DARLINGTON, F.R.S.

CHROMOSOMES AND PLANT BREEDING
Macmillan 1932

RECENT ADVANCES IN CYTOLOGY
2nd ed. *Churchill* 1937

THE EVOLUTION OF GENETIC SYSTEMS
2nd impression *Cambridge University Press* 1946

THE CONFLICT OF SCIENCE AND SOCIETY
Watts 1948

THE FACTS OF LIFE
Allen and Unwin 1953

CHROMOSOME BOTANY
Allen and Unwin 1956

with E. K. Janaki Ammal

CHROMOSOME ATLAS OF CULTIVATED PLANTS
Allen and Unwin 1945

with L. F. La Cour, M.B.E.

THE HANDLING OF CHROMOSOMES
2nd ed. *Allen and Unwin* 1947

with K. Mather, F.R.S.

THE ELEMENTS OF GENETICS
Allen and Unwin 1949

GENES, PLANTS AND PEOPLE
Allen and Unwin 1950

CHROMOSOME ATLAS

of Flowering Plants

C. D. Darlington
and
A. P. Wylie

LONDON
GEORGE ALLEN & UNWIN LTD
Ruskin House Museum Street

FIRST EDITION (WITH E. K. JANAKI AMMAL)
PUBLISHED IN 1945
SECOND EDITION (WITH A. P. WYLIE) 1955

This book is copyright under the Berne Convention. Apart from any fair dealing for the purposes of private study, research, criticism or review as permitted under the Copyright Act 1911, no portion may be reproduced by any process without written permission. Enquiry should be made to the publisher

PRINTED IN GREAT BRITAIN
in Times Roman type
AT THE UNIVERSITY PRESS
ABERDEEN

To

NIKOLAI IVANOVICH VAVILOV

1886 - 1942

President of the Lenin Academy of Agricultural Sciences

1921 - 1940

For. Mem. R.S.

1945

PREFACE

TEN years have passed since the publication of the *Chromosome Atlas of Cultivated Plants* by C. D. Darlington and E. K. Janaki Ammal. During these years our knowledge has widened, deepened and developed. Some of the most significant developments have been due to the work of Dr. Janaki Ammal, first in the Royal Horticultural Society's Gardens at Wisley and latterly with the Indian Botanical Survey at Calcutta.

In this interval the known chromosome numbers have been nearly doubled. They have now been studied in some fifty thousand flowering plants belonging to nearly twenty thousand species. In this time too the physical means by which chromosomes change their forms and numbers have been experimentally demonstrated. The evolutionary consequences of these changes have become much clearer. Chromosome systematics has been brought into a fertile union with plant geography and plant ecology.

In view of this growth and transformation the title of the book has been changed in this new edition and its scope extended to include all flowering plants. Its purpose is threefold.

First, for the systematist it is intended to show how chromosome numbers can be used as a basis of the classification of species, genera and families. Secondly, for the plant breeder it is intended to show, in general, the genetic structure of groups of plants and in particular what species may be crossed and with what results. Thirdly, for the cytologist it is intended to show what work has been done and where it has been published. Perhaps we may also disclose a fourth purpose, the personal interest of the authors in which some readers may join us. This is to discover something of value for the geneticist and evolutionist, namely, the rules or laws of chromosome variation.

The first edition of this book already revealed the important principle that the stability of chromosome numbers is a function of the length of the life cycle. Woody plants are immensely stable. Comparison of their chromosome numbers therefore clarifies remote evolutionary relationships. Ephemeral plants are in varying degrees unstable. Comparison of their chromosome numbers therefore clarifies the origins of living species and the foundations of ecological genetics. This principle is useful to us at once for, in producing the atlas, we are enabled to abbreviate the uniform and stable genera and expand the more interesting unstable genera.

The present edition has gone further in indicating the widespread existence with unstable genera of two types of chromosomes: the A chromosomes which maintain heredity and the B chromosomes which stimulate variation. Exploring this distinction offers us an important field of research.

The means of interpreting and exploiting the materials in the Chromosome Atlas were discussed in a lengthy introduction to the first edition. This has now grown to need a separate volume, a companion volume entitled *Chromosome Botany*. Each volume separately will be useful to a particular group of individuals. The two together should be of interest rather to libraries and research laboratories.

C. D. DARLINGTON
Department of Botany
Oxford

A. P. WYLIE
Department of Botany
Manchester

ACKNOWLEDGMENTS

WE are indebted to Dr. W. B. Turrill of the Royal Botanic Gardens, Kew and Dr. P. S. Hudson of the Imperial Bureau of Plant Breeding and Genetics for the unrestricted use of their libraries.

We are also indebted to numerous collaborators apart from those already mentioned.

Dr. N. W. Simmonds of the Imperial College of Tropical Agriculture, Trinidad, checked uses and distributions of the Musaceae; Miss N. Burbidge of the Herbarium, Kew, the *Eucalyptus* and *Acacia* sections; Mr. G. D. Rowley the succulents (Ficoidaceae, Cactaceae and Crassulaceae); Major Albert Pam the Amaryllidaceae. Colonel F. C. Stern provided the preliminary list of *Iris* species.

The sources of the ILLUSTRATIONS are given in the Contents (p. xviii) and we wish to thank the authors acknowledged for the use of their figures both published and unpublished.

INTRODUCTION

How to Use the Atlas

FIRST COLUMN: SYSTEMATIC ORDER AND BOTANICAL NAMES

The families of Angiosperms follow the order and bear the numbers of Hutchinson's "Families of Flowering Plants" (Dicotyledons, 1926; Monocotyledons, 1934). 241 out of 332 families are represented. To facilitate reference the whole are divided into 25 groups of orders, as listed in the Contents. Three exceptions are made to Hutchinson's subdivision. (i) We have, on account of their chromosome affinities, retained the Tribes Allieae and Agapantheae in the heterogeneous Liliaceae. (ii) On account of the chromosome evidence we have followed the suggestion of H. P. Traub (1946) and taken the Tribe Hemerocallideae out of the Liliaceae in the Atlas, putting *Hemerocallis* into the Amaryllidaceae and *Hosta* into the Agavaceae. (iii) We have kept the Nolanaceae separate from the Convolvulaceae. We have resisted the temptation, however, to put the Garryaceae back into the Cornaceae.

The families of Gymnosperms are taken from Pilger in Engler and Prantl's *Die Natürlichen Pflanzenfamilien* (1926) and follow our own order. Large families of Angiosperms we have subdivided as follows:

(i) Divided into Tribes:

Ranunculaceae, after W. C. Gregory (1941).

Cruciferae, after Schulz, in Engler and Prantl (1936).

Papilionaceae, after Taubert, 1894, cf. Willis 1931 (but putting *Abrus* out of the Viciae into the Phaseoleae, following Senn, 1938).

Umbelliferae, after Engler, cf. Willis 1931.

Compositae, after Hoffman, in Engler and Gilg (*Syllabus der Pflanzenfamilien*, 1919).

Liliaceae, after Hutchinson, 1934.

Gramineae, after Hubbard (unpublished).

(ii) Divided into sub-families, etc.:

Caryophyllaceae, after Pax, cf. Willis, 1931.

Euphorbiaceae, after Pax, cf. Willis, 1931.

Rosaceae, partly after Focke, cf. Willis, 1931 and Clapham, Tutin and Warburg 1952.

Scrophulariaceae, into Parasites and Non-Parasites.

Myrtaceae, after Niedenzu, in Engler and Prantl (1898).

A synopsis of the tribes given before the families indicates the pattern of variation in chromosome number. The order in which we have taken them generally follows our rule which is to proceed from the lower to the higher basic numbers. Genera within families or tribes we have likewise, with special exceptions, taken in ascending order of basic numbers. Groups are headed by their basic numbers, primary x , secondary x_2 .

Individual genera are likewise subdivided where necessary according to basic number and ploidy. The exceptions are certain large genera which have been, in our view, satisfactorily divided into sections on other grounds, e.g. *Prunus*, *Rosa*, *Primula*, *Crepis*, *Rhododendron*, *Nicotiana*, *Bellevia*, *Tulipa*, *Calochortus* and *Iris*. Genera in which apomixis is known are noted since its occurrence is usually related to ploidy.

Synonyms or old alternatives corresponding to the whole or part of a genus are given in brackets. The name given by the chromosome author may then be either the first or the second. If the second, a more recent authority has been found in Willis, Bailey, Rehder or Clapham, Tutin and Warburg, confirmed sometimes by the chromosome evidence itself. In particular, Dr. Hubbard corrected the whole of the Gramineae for the first edition in the light of this evidence.

We have not put the conventional \times before the name of an alleged hybrid since in our view this usage has no exact meaning without experimental and cytological control. Such forms often appear in the sixth column as *cult.*

The specific name of a plant without the name of the describer refers to a group of plants resembling the available descriptions or illustrations of the type specimen. When the name of the describer is attached it refers to plants identical in all significant respects with this type specimen. Since type specimens are dead plants in herbaria their chromosome numbers cannot be certainly known. They may often differ from those of plants which seem to be identical with them when lying dead in herbaria. This is proved by the fact that two plants with widely different chromosome numbers are assigned to the same species without qualification by competent systematists. In these circumstances the use of the authority's name in conjunction with the chromosome number would be misleading for the person who made the observation on the chromosomes. And its insertion by a compiler after the event would be actually fraudulent. The chromosome number itself constitutes a new independent criterion of classification. It must not be identified with the Linnean system but must be kept independent if its value is to be utilised in approaching the distant goal of putting the classification of plants and animals on a natural, that is a genetic, basis.

In all, over 15,000 species in 2,500 genera are included in the catalogue. About half the larger genera, those with the greatest constancy, have been abbreviated. The names of species have been omitted where many have the same chromosome number, especially in stable genera, amounting altogether to about 3,000. These genera are indicated by an asterisk. About half the species summarised in this way will be found in the first edition, and the remainder in the references which have always been retained. Similarly the names of some 500 economically important species, which were included in the first edition and whose chromosome numbers are not yet known, have been left out. The remainder, those of greatest interest, amount to about 12,000 species. These are recorded in detail. Some of these have been the subject of extensive study and experiment. The majority, however, have been examined merely from single and even unrepresentative specimens. The effect is that only a part of the natural wealth of variation in chromosome numbers is now revealed. Much remains to be discovered.

SECOND COLUMN: POPULAR NAMES

Important economic or decorative species, or their useful products, have been given their popular, vernacular or commercial names, English and American, Spanish and Portuguese, Hindustani and Hottentot. These names often have a priority over the scientific names and may, we fear, often survive them. In some genera, like *Brassica* and *Iris*, where systematics has been defeated by plant breeding, the popular names often alone have any meaning. On the other hand, we have tried (with partial success) to avoid the many bogus popular names given in reference books which are either scholastic translations or attempts to impose botanical rules on the common speech. Secondary or borrowed popular names such as "Papaw", applied in America since 1760 to *Asimina*, as well as to *Carica papaya* we have placed in quotation marks.

THIRD COLUMN: NUMBERS

The somatic or "diploid" number, and not the gametic or haploid number, is given in all cases. It varies from 6 to 500, and may have been either directly observed or calculated from observations of mitosis in the pollen or of meiosis in the pollen mother cells. The chromosome numbers of experimentally produced haploids and polyploids are put in brackets. Supernumerary chromosomes whose numbers are presumed to be unstable are indicated by B.

Errors. A proportion of the ascriptions of chromosome numbers to names of species are undoubtedly incorrect. In the first edition we estimated the proportion of errors as 5 per cent. In the present edition it is probably reduced to about 3 per cent., divided, we believe, between miscounting, misnaming, and the accidents of hybridisation and labelling in botanic gardens. Where the author is uncertain we prefix *c.* (*circa*). Where we are uncertain of the number, or of its attachment to the botanical name given, we add a question mark. Where the name seems clearly incorrect we put it in quotation marks or add a query.

A more important source of error remains, however, not in the ascription but in the interpretation, where insufficient facts have been given by enthusiasts interested only in accumulating lists of numbers. Where, for example, two numbers not in a polyploid series have been ascribed to one species by different authors we often do not know whether the difference is made up of paired or unpaired chromosomes or of supernumerary or B chromosomes, either new and sporadic or old and well-established. One of the purposes of the Atlas is to reveal these dangers and show how to deal with them: how, in other words, a true chromosome number can be authentically attached to a significant name.

FOURTH COLUMN: AUTHORS

Where two accounts differ in number for the same species we have quoted both. We have omitted only ancient and obvious errors. Where accounts agree, we have reversed the rule of botanical priority and quoted the last important reference, since from this the earlier sources can usually be obtained.

Previous summaries of chromosome numbers are referred to by the following initials as abbreviations:

Delay: D. 1951 (general).

Ishikawa: I. 1916 (general).

Kihara *et alii*: K. 1931 (Japanese cultivated plants).

Löve and Löve: L. & L. 1942, 1944, 1948 (Scandinavian Flora).

Matsuura and Suto: M. & S. 1935 (personal counts).

Maude: M. 1939 (British Flora).

Tischler: T. 1922, 1926, 1931, 1937, 1938 (general), 1950 (Central European Flora).

Most of these lists contain otherwise unpublished information, and Tischler's and Delay's lists form a series of catalogues of nearly all numbers published up to 1950.

In addition we are indebted for some unpublished counts to our colleagues Messrs. L. F. La Cour, R. D. Brock, J. B. Hair, B. Snoad and R. de V. Pienaar and to many correspondents. For special lists we are indebted to:

Professor H. N. Barber and members of the Botany Department,
University of Hobart (many Australian plants).

Professor P. T. Thomas, University of Wales, Aberystwyth
(African grasses).

Dr. S. Smith-White and other members of the Botany Department,
University of Sydney (many Australian plants).

Dr. O. H. Frankel, F.R.S. (*Hebe*).

Dr. H. G. Baker (Geraniaceae, Plumbaginaceae).

Dr. Harlan Lewis (*Clarkia*).

Some 150 unpublished counts by Dr. E. K. Janaki-Ammal for the first edition are initialled EKJ*. These are chiefly grasses and the neglected economic plants of the tropics.

FIFTH COLUMN: USES OF PLANTS

The known or supposed uses of all the more useful plants are summarised. We should have liked to include a similar classification for habits and reproductive methods, but this must be left for a later work. In preparing the catalogue of uses we have chiefly relied on the valuable works listed in the Special References. We have used the Guide to the Kew Museums of Economic Botany and, in addition, various special works and nurserymen's catalogues.

The following initials show our classification of uses:

- A *Alcoholic Liquors*, produced by fermentation (barley for malting, grapes for wine, cocoanut sap for arrak).
- B *Beverages*, produced by infusion (tea, coffee, cocoa).
- C *Carnivorous Plants* (Droseraceae, Sarraceniaceae).
- D *Dyes and Tannins* (indigo, madder, annatto, cassia, wattle, oak bark).
- F *Fruits*, edible by man (apple, mango, orange, banana, lichi, fig, melon, tomato, date palm).
- Fs *Stocks* for fruit and flowering trees (*Atalantia*, *Crataegus*, *Prunus*, *Rosa*).
- Fo *Fodder*, green for cattle, sheep, elephants, etc. (grasses, legumes, roots and trees).
- Fo₁ *Fodder*, for insects (mulberry and *Ricinus* for silkworm, *Opuntia* for cochineal, *Cassia* for shellac insect).
- G *Grains and Pulses* for cattle and man (cereals and legumes, buckwheat).

- H *Horticultural Plants*, grown for decoration, instruction, experiment, protection, curiosity or religious edification, including hedge-plants and lawn grasses.
- I *Insecticides* and *Vermifuges*, for infusion or dusting (nicotine, derris, *Pyrethrum*, santonine).
- M *Medicinal Plants*, drugs and poisons including fish-poisons (cascara, quinine, cocaine, nux vomica, hemp).
- Ma *Green Manure*, chiefly leguminous crops.
- N *Nuts*, edible by man (walnut, chestnut, cocoanut, pistachio).
- O *Oil Seeds* and *Waxes* (linseed, sunflower, rape, cotton-seed, castor oil, sesame, palms).
- P *Perfumes* and *Essential Oils*, naturally volatile (rose, violet, jasmine, lavender, sandalwood, eucalyptus, lemon-grass).
- Par *Parasites* and *Semi-Parasites* (Orobanchaceae, Mistletoe, sandalwood tree).
- R *Roots, Tubers* and *Bulbs*, edible or extractable (potato, turnip, radish, arrowroot, tapioca, yam).
- Re *Resins*, extracted from trees (damar, copal, mastics, balsams, frankincense and myrrh).
- Ru *Rubber* from latex of roots or stems (Euphorbiaceae, Compositae, Asclepiadaceae, Apocynaceae and Sapotaceae).
- Sb *Sand-binders* (bindweeds, grasses and trees).
- Sh *Shade Trees* for parks, avenues, nurseries and plantations (*Grevillea*, *Erythrina*, *Ficus*, *Eucalyptus*, *Cedrus*).
- Sp *Spices* and *Condiments* (peppers, cinnamon, cloves, ginger, herbs of Umbelliferae, Labiatae and Compositae).
- St *Starch*, extracted from stems (*Caryota*, *Cycas*).
- Su *Sugar*, extracted from stems or roots (sugar-cane, sugar-beet and palms). Also sweeteners (liquorice, etc.).
- T *Textile Fibres*, for weaving fabrics, carpets, mats, baskets, ropes and cords and for paper-making and thatching (cotton, jute, hemp, raffia, bamboo).
- To *Tools*: weapons, vessels, pipes, strainers, cleaners, beads, made directly from fruits and stems (gourd, lufa, bamboo, teasel, *Coix*).
- V *Vegetables*, green crops and salads, not roots (cabbage, celery, lettuce, cucurbits).

- Vit *Vitamin C* sources, fruits and stems (*Actinidia*, walnut, rose, paprika).
- W *Wood*, timber, cork and charcoal-wood trees (Gymnosperms, palms, hardwoods).

SIXTH COLUMN: DISTRIBUTIONS

The distributions have been taken primarily from the Index Kewensis, whose main geographical divisions are shown on the back end-papers. This source has been enlarged and amended in the light of more recent authorities particularly Vavilov (1926, 1933, 1950), Bailey's *Hortus Second* (1941), Chittenden's *Dictionary of Gardening* (1951), Laufer's historical "Sino-Iranica" (1919), and special systematic works many of them included in the chromosome studies quoted.

We have translated the ancient and modern Latin localities in the Index Kewensis as follows:

Amphig., Cosmopolitan.

Amphig. Trop., Tropics.

Byzant., S. W. Asia.

Dahuria, Amur.

Geront. Trop., Old World Tropics.

Ind. or., India (not East Indies).

Masc. Ins. (Mascarene Islands), Madagascar, etc.

N. Granat., New Granada, i.e. Colombia.

Oriens., S. W. Asia (including Nile Delta).

Cilicia, Galatia, Pisidia, Asia Minor.

Soongaria, Turkestan.

Taurus, Taurus Mountains.

Mistakes have frequently been made in putting these names into English since no one has undertaken to define them, and their original meaning is now obscured by the process of time.

Forms labelled *cult* are those effectively distinct from wild species. They are chiefly derived from hybridisation of two or more races or species with later selection and with or without later changes of chromosome number.

CONTENTS

PREFACE	PAGE VI
ACKNOWLEDGMENTS	vii
INTRODUCTION: How to Use the Atlas	viii
<i>First Column: Systematic Order and Botanical Names</i>	viii
<i>Second Column: Popular Names</i>	x
<i>Third Column: Chromosome Numbers</i>	x
<i>Fourth Column: Authors</i>	xi
<i>Fifth Column: Uses of Plants</i>	xii
<i>Sixth Column: Distributions</i>	xiv
References for the Introduction	xvii
CONTENTS OF THE ATLAS AND LIST OF ILLUSTRATIONS	xviii
THE ATLAS	
I <i>Gymnosperms</i>	1
II <i>Dicotyledons</i>	9
III <i>Monocotyledons</i>	331
BIBLIOGRAPHY	
INDEX TO FAMILIES AND GENERA	

Examples of Categories used in The Atlas in their order of importance

1 Class	I GYMNOSPERMS	
	II DICOTYLEDONS	
	III MONOCOTYLEDONS	
2 Group	(1-10 Orders)	XIII ERICALES
3 Family		I43 ROSACEAE
4 Sub-family	SF 1: ROSOIDEAE	
5 Tribe	TRIBE II: HELIANTHEAE	(in Compositae)
6 Genus	ROSA	
7 Subgenus	SUBGENUS 4: EUROSA	(in <i>Rosa</i>)
8 Section	S 2: RETICULATA	(in <i>Iris</i>)
9 Series	Series: LAPPONICUM	(only in <i>Rhododendron</i>)
10 Species	<i>persica</i>	(in <i>Rosa</i>)
11 Variety	v. <i>bicolor</i>	(of <i>Rosa foetida</i>)

REFERENCES FOR THE INTRODUCTION

- BAILEY, L. H. and BAILEY, E. Z. 1941. *Hortus Second*. New York.
- BURKILL, I. H. 1935. *A Dictionary of the Economic Products of the Malay Peninsula*. London.
- CHITTENDEN, F. J. 1951. *Dictionary of Gardening*. Oxford.
- CLAPHAM, A. R., TUTIN, T. G. and WARBURG, E. F. 1952. *Flora of the British Isles*. Cambridge.
- DALZIEL, J. M. 1948. *Useful Plants of West Tropical Africa*. London.
- DEY, K. L. 1896. *Indigenous Drugs of India*. Calcutta.
- GREGORY, W. C. 1941. *Trans. Amer. Phil. Soc.*, N.S. 31, 443.
- HITCHCOCK, A. S. 1935. *Manual of the Grasses of the United States*. Washington.
- HOLLAND, J. H. 1937. *Overseas Plant Products*. London.
- MACMILLAN, H. F. 1925. *Tropical Gardening and Planting*. Colombo.
- MEDSGER, O. P. 1947. *Edible Wild Plants*. New York.
- NICHOLSON, G. *Illustrated Dictionary of Gardening* (N.D.). London.
- REHDER, A. 1940. *Manual of Cultivated Trees and Shrubs*. 2nd edn. New York.
- SAMPSON, H. C. 1936. Cultivated Crop Plants of the British Empire, etc. *Kew. Bull. Misc. Inf. Add. Series* 12.
- SHERY, R. W. 1954. *Plants for Man*. London.
- DE SORNAY, P. 1916. *Green Manures and Manuring in the Tropics*. (Trans. Flattely). London.
- STURTEVANT, E. L. 1919. *Notes on Edible Plants*. Albany, New York.
- TRAUB, H. P. 1946. *Review of Chromosome Atlas*, 1st edn. *Plant Life*, 2, 99.
- WILLIS, J. C. 1931. *A Dictionary of Flowering Plants and Ferns*. 6th edn. Cambridge.

CONTENTS OF THE ATLAS

GROUP	FAMILIES	ORDERS	ILLUSTRATION
—	1-12	GYMNOSPERMS	<i>Welwitschia mirabilis</i> × 2600 Fernandes 1936
		DICOTYLEDONS	
I:	1-14	Magnoliales, Annonales, Laurales	<i>Annona squamosa</i> × 2800 Islam unp.
II:	15-31	Ranales, Berberidales, Aristolochiales, Piperales	<i>Clematis vitalba</i> × 2100 Maude 1940
III:	32-44	Rhoeadales, Loasales, Capparidales, Cruciales, Violales, Polygalales	<i>Chelidonium majus</i> × 3200 English race: 2n = 12. Japanese race, ring-forming: 2n = 10 Nagao and Masima 1943b
IV:	45-64	Saxifragales, Sarraceniales, Podostemonales, Caryophyllales, Polygonales, Chenopodiales	<i>Melandrium album</i> ♂ × 2900 Westergaard 1940
V:	65-84	Geraniales, Lythrales, Thymelaeales, Proteales	<i>Daphne mezereum</i> × 2100 Maude 1940
VI:	85-107	Dilleniales, Coriariales, Pittosporales, Bixales, Tamaricales, Passiflorales, Cucurbitales, Cactales	<i>Cistus corbariensis</i> × 1800 B. Snoad unp.
VII:	108-126	Theales, Myrtales, Guttiferales	<i>Eucalyptus rudis</i> × 3300 Atchison 1947b
VIII:	127-136	Tiliales, Malvales, Malpighiales, Euphorbiales	<i>Gossypium arboreum</i> × 2800 Skovsted 1935
IX:	137-148	Cunoniales, Rosales, Leguminosae	<i>Vicia faba</i> × 2100 McLeish unpub.
X:	149-170	Hamamelidales, Salicales, Garryales, Leitneriales, Myricales, Balanopsidales, Fagales, Casuarinales, Urticales	<i>Betula verrucosa</i> × 3600 Löve 1944
XI:	171-208	Celastrales, Olacales, Santalales, Rhamnales, Rutales, Meliales, Sapindales, Juglandales	<i>Aesculus hippocastanum</i> & <i>A. carnea</i> × 3600 Upcott 1936b
XII:	209-213	Umbelliflorae	<i>Silaum silaus</i> × 2100 Maude 1940
XIII:	214-220	Ericales	<i>Daboecia cantabrica</i> × 2100 Maude 1940
XIV:	221-231	Ebenales, Myrsinales, Styracales, Loganiales, Apocynales	<i>Fraxinus chinensis</i> × 1200 Taylor 1945
XV:	232-238	Rubiales, Asterales	<i>Chrysanthemum millefoliatum</i> × 2800 Dowrick 1952b
XVI:	239-242	Gentianales, Primulales, Plantaginales	<i>Primula sinensis</i> × 4600 Darlington 1931a
XVII:	243-249	Campanales, Polemoniales, Boraginiales	<i>Campanula persicifolia</i> × 4500 Darlington and La Cour 1950

GROUP	FAMILIES	ORDERS	ILLUSTRATION
XVIII:	250-264	Solanales, Personales, Lamiales	<i>Glechoma hederacea</i> × 3000 Rutland 1941
MONOCOTYLEDONS			
I:	265-285	Butomales, Alismatales, Triuridales, Juncaginales, Aponogetonales, Potamogetonales, Najadales, Commelinales, Xyridales, Eriocaulales	<i>Hydrocharis morsus-ranae</i> × 2100 Maude 1940
II:	286-292	Bromeliales, Zingiberales	<i>Musa paradisiaca</i> Banana "Gros Michel" "3950" Larter 1935
III:	293-307	Liliales, Alstroemeriales, Arales, Typhales, Amaryllidales, Iridales	<i>Puschkinia libanotica</i> × 3600 Darlington 1937a
IV:	308-316	Discorales, Agavales, Palmales, Pandanales, Cyclanthales	<i>Dioscorea batatas</i> × 3700 B. W. Smith 1937
V:	317-326	Haemodorales, Burmanniales, Orchidales	<i>Cephalanthera erecta</i> × 1250 Miduno 1938
VI:	327-332	Juncales, Cyperales, Graminales	<i>Sieglingia decumbens</i> × 2100 Maude 1940

GYMNOSPERMS



Welwitschia mirabilis

I CYCADACEAE

CERATZAMIA $x \approx 8$

mexicana

16 Resende 1937 H Mexico

STANGERIA $x = 8$

paradoxa (eriopus)

16 Sax & B. 1934 H S. Africa

ZAMIA $x = 8, 9$

floridana Coontie

16 Sax & B. 1934 H Bah., S. Fla.

media

16 " " H W. Indies

loddigesii

18 Resende & R. 1948 H Mexico

BOWENIA $x \approx 9$

serrulata

18 Sax & B. 1934 H Australia

spectabilis

18 Resende & R. 1948 H "

DIOON (DION) $x \approx 9$

edule

18 Viveiros 1951 N Mexico

spinulosum

18 Sax & B. 1934 H "

ENCEPHALARTOS $x = 9$

altensteinii Hottentot B.

18 Resende 1940 NH S. Africa

caffer Kaffir Bread

18 Viveiros 1951 NSt "

horridus

18 Resende 1940 H "

latifrons

18 " " H ?

lehmannii

18 Viveiros 1951 H S. Africa

villosus

18 " " H "

MACROZAMIA $x \approx 9$

miquelii

18 Sax & B. 1934 H Australia

moorei

18 " " H "

tridentata

18 " " H "

CYCAS $x \approx 11, 12$

circinalis Eenthu

22 Sax & B. 1934 HNSt S.E. As., E. Ind.

rumphii

22 " " H Mal., Austr.

revoluta

{ 22 " " HNSt S. Japan
22, 24 T. Nakamura 1929

MICROCYNAS $x = 13$

calocoma Corcho

26 Sax & B. 1934 H Cuba

2 GINGKOACEAE

GINGKO $x = 12$

biloba

24 Lee 1954 H E. China

3 TAXACEAE

TORREYA $x = 11$

macrocarpa

22 Nakajima 1942 W Japan

nucifera

22 Hirayoshi 1942 NOW "

TAXUS $x = 12$

<i>baccata</i>	English Yew	24	Dark 1932a	HW	N. Temp.
	Irish Yew	24	" "	H	<i>cult</i>
<i>canadensis</i>	Ground Hemlock	24 + 1B	" "	H	N. America
<i>cuspidata</i>	Japanese Y.	24	" "	HW	Japan
<i>hunnelliana</i>		24	Sax & S. 1933	H	<i>cult</i>
<i>media</i>		24	" "	H	"

4 PODOCARPACEAE

PODOCARPUS $x = 19$ (12, 20)

<i>falcatus</i>		24	Flory 1936	H	S. Africa
<i>neriifolius</i>		38	" "	H	Himalayas
<i>nivalis</i>	Alpine Totara	38	Snod 1952	H	N. Zealand
<i>macrophyllus</i>	Kusamaki	38	Hirayoshi 1942	H	China, Japan
<i>as chinensis</i>		40	Flory 1936		
<i>andinus</i>		c. 40	" "	FH	Chile

5 ARAUCARIACEAE

AGATHIS $x = 13$

<i>robusta</i>	Queensland Kauri Pine	26	Flory 1936	W	Australia
----------------	-----------------------	----	------------	---	-----------

ARAUCARIA $x = 13$

<i>bidwillii</i>	Bunya-Bunya	26	Flory 1936	H	Australia
<i>brasiliiana</i>	Parana P.	26	" "	H	Brazil
<i>cunninghamii</i>	Hoop P.	26	" "	H	Australia

6 CEPHALOTAXACEAE

CEPHALOTAXUS $x = 12$

<i>drupacea</i>	Jap. Plum Yew	24	Sugihara 1940	H	Japan
<i>fortunei</i>	Chinese P.Y.	24	Sax & S. 1933	H	C. China

7 TAXODIACEAE

SCIADOPITYS $x = 10$

<i>verticillata</i>	Umbrella Pine	20	Tahara 1937	H	Japan
---------------------	---------------	----	-------------	---	-------

ATHROTAXIS $x = 11$

<i>cupressoides</i>		22	Gulline 1952	H	Tasmania
<i>laxifolia</i>		22	" "	H	"
<i>selaginoides</i>	King William P.	22	" "	H	"

CRYPTOMERIA $x = 11$

<i>japonica</i>		22	Sax & S. 1933	HW	Japan
		(44)	Zinnai & C. 1951		

CUNNINGHAMIA $x = 11$

<i>lanceolata</i>	China Fir	22	Sugihara 1941	H	S. & W. China
-------------------	-----------	----	---------------	---	---------------

TAIWANIA $x = 11$					
<i>cryptomerioides</i>		22	Sax & S. 1933	H	Formosa, Yunnan
TAXODIUM $x = 11$					
<i>distichum</i>	Bald Cypress	22	Stebbins 1948	H	N. America
METASEQUOIA $x = 11$					
<i>glyptostroboides</i>		22	Stebbins 1948	H	C. China
SEQUIADENDRON $x = 11$					
<i>giganteum</i>	Big Tree	22 (44)	Jensen & L. 1941	HW	California
SEQUIA $x = 11$					
<i>sempervirens</i>	Redwood	166 166	Hirayoshi & N. '43 Stebbins 1948	HW	California

8 PINACEAE

SF1: ABIETOIDEAE

PSEUDOLARIX $x = 11$					
<i>amabilis</i>	Golden Larch	44	Sax & S. 1933	HW	China
TSUGA $x = 12$					
<i>canadensis</i>	Hemlock	24	Sax & S. 1933	DW	N. America
<i>caroliniana</i>		24	" "	W	" "
<i>diversifolia</i>		24	" "	W	Japan
ABIES $x = 12$					
<i>balsamea</i>	Balsam F.	24	Miyake 1903	HW	N. America
<i>cephalonica</i>	Greek Fir	24	Sax & S. 1933	HW	Greece
<i>concolor</i>	White Fir	24	" "	HW	N. America
<i>nordmanniana</i>	Caucasian F.	24	" "	HW	Caucasus
<i>veitchii</i>		24	" "	HW	Japan
<i>pindrow</i>		24	Mehra & K. 1948b	H	Himalayas
CEDRUS $x = 12$					
<i>deodara</i>	Deodar	24	Mehra & K. 1948b	HMW	Himalayas
<i>libanensis</i>	Lebanon C.	24	Sax & S. 1933	HW	Syria
KETELEERIA $x = 12$					
<i>davidiana</i>		24	Sugihara 1943	H	China
<i>as evelyniana</i>		24	Wang 1948	H	W. China
LARIX $x = 12$					
<i>decidua</i>	Common Larch	24	Sax & S. 1933	HW	Eur., W. Asia
(<i>europaea</i>)		1 24, 48	Christiansen 1950		
<i>eurolpis</i>	Dunkeld L.	24	Sax 1932	W	<i>cult</i>
<i>dahurica</i> (<i>gmelinii</i>)		24	Woycicki 1906	HW	Siberia
<i>leptolepis</i>	Jap. L.	24	Sax & S. 1933	H	Japan
(<i>kaempferi</i>)					
<i>occidentalis</i>	W. Amer. L.	24	" "	—	W: N. Amer.
<i>polonica</i>		24	Hruby 1933	—	Poland
<i>sibirica</i>	Siberian L.	24	L. & L. 1948	—	Siberia
<i>sudetica</i>		24	Hruby 1933	—	Europe
<i>decidua</i> \times <i>sibirica</i>		(36)	Larsen & W. 1938	H	<i>cult</i>

PICEA $x = 12$

<i>abies</i>	Norway Spruce	24	Sax & S. 1933	ReW	Europe
		24, 48	L. & L. 1948		
<i>glauca</i>	White S.	24	Sax & S. 1933	W	N. America
<i>mariana (nigra)</i>	Black S.	24	" "	W	"
<i>pungens</i>		24	" "	W	W. N. America
<i>sitchensis</i>	Sitka S.	24	Thomas 1945*	W	" "

PSEUDOTSUGA $x = 13$

<i>taxifolia</i>	Douglas Fir	26	Sax & S. 1933	W	W. N. America
------------------	-------------	----	---------------	---	---------------

SF2: PINOIDEAE

PINUS * $x = 12$

<i>canariensis</i>	Canary Is. P.	24	Bowden 1945b	HW	Canary Is.
<i>caribaea</i>	Cuban P.	24	Mehra & K. 1948b	ReW	S.E. U.S.A., C. Amer.
<i>contorta</i>	Shore P.	24	Langlet 1934	W	W: N. Amer.
<i>densiflora</i>	Jap. Red P.	24	Hirayoshi 1942	ReW	Japan
<i>gerardiana</i>	Nepal Nut P.	24	Mehra & K. 1948b	NW	Himalayas
<i>halepensis</i>	Aleppo P.	24	" "	Re	Medit.
<i>lambertiana</i>	Sugar P.	24	" "	SuW	W: N. Amer.
<i>nigra (laricio)</i>	Corsican P.	24	Sax & S. 1933	ReW	S. Europe
<i>sylvestris</i>	& 17 spp.	24	" "	W	N. Eur., Alps
<i>palustris</i>	Longleaf P.	24	Mathews 1932	OREW	E: N. Amer.
<i>patula</i>		24	Bowden 1945b	—	Mexico
<i>pinaster</i>	Cluster P.	24	Saxton 1909	ReW	Medit.
<i>pinea</i>	Stone P.	24	Lane unp.	ReW	" "
<i>radiata</i>	Monterey P.	24	Mehra & K. 1948b	W	S. Calif.
<i>roxburghii</i>	Chir P.	24	Sethi 1928	NReW	Himalayas
<i>wallichiana</i>	Blue P.	24	Mehra & K. 1948b	HSuW	"

9 CUPRESSACEAE

CALLITRIS $x = 11$

<i>rhomboidalis</i>		22	Gulline unp.	HReW	Australia
---------------------	--	----	--------------	------	-----------

CHAMAECYPARIS $x = 11$

<i>lawsoniana</i>	L. Cypress	22	Sax & S. 1933	HW	W: N. Amer.
<i>obtusa</i>	Hinoki C.	22 (44)	Hirayoshi 1942 Kanezawa 1951	HW	Japan

CUPRESSUS $x = 11$

<i>funeris</i>	Mourning Cyp.	22	Mehra & K. 1948b	H	C. China
<i>lusitanica</i>	Cedro do Buçaco	22	Camara & de J. 1946	H	Mexico, Guat.
<i>sempervirens</i>	Medit. C.	22	Mehra & K. 1948b	HPW	S. Eur., S.W. Asia
<i>torulosa</i>	Bhutan C.	22	" "	HW	Himalayas

LIBOCEDRUS $x = 11$

<i>plumosa (doniana)</i>	Kawaka	22	Lane unp.	HW	New Zealand
--------------------------	--------	----	-----------	----	-------------

THUJA $x = 11$

<i>occidentalis</i>	Arbor-Vitae, White Cedar	22	Sax & S. 1933	BH	E: N. Amer.
<i>orientalis</i>	Chinese A.-V.	22	" "	H	N. & W. China

THUJA (cont.)

<i>plicata</i>	West. Red C.	22	Sax & S. 1933	StW	W: N. Amer.
(<i>gigantea</i>)					
<i>standishii</i>	Japanese A.-V.	22	„ „	HW	Japan

JUNIPERUS $x = 11$

<i>communis</i>	Juniper	22	Sax & S. 1933	BHSp	N. Temp. Arctic
(<i>sibirica</i>)					
<i>horizontalis</i>	Creeping J.	22	Ross & D. 1949	H	N. America
<i>rigida</i>	Needle J.	22	Sax & S. 1933	H	Jap., Kor., Manch.
<i>sabina</i>	Savin	22-24	Reese 1952a	HMO	Eur., W. Asia
<i>virginiana</i>	Red Cedar	22, 33	Stiff 1951	HORe	N. America
<i>chinensis</i>	Chinese J.	44	Sax & S. 1933	H	Ch., Japan, Mong.

10 EPHEDRACEAE

EPHEDRA $x = 7$

<i>americana (andina)</i>		14	Resende 1937	—	S. America
<i>equisetina</i>	Mongolian E.	14	Florin 1932	M	C. Asia—N. China
<i>foliata</i>		14	Mehra 1946	—	S.W. Asia
<i>fragilis (campylopoda)</i>		14	Geitler 1929a	—	Mediterranean
<i>major (nebrodensis)</i>		14	„ „	—	Medit.—Himal.
<i>gerardiana</i>		14	Mehra 1946	—	Himal.,
		(28	„ 1934	—	S.W. China
<i>altissima (algerica)</i>		28	„ 1946	—	N. Africa
<i>distachya</i>	Sea Grape	28	Florin 1932	FM	Eur., N. Asia
<i>intermedia</i>		28	Mehra 1946	—	C. Asia
<i>likiangensis</i>		28	„ „	—	Yun., Szech.
<i>saxatilis</i>		28	„ „	—	China
<i>sinica</i>	Ma-huang	28	Resende 1937	M	„

11 GNETACEAE

GNETUM $x = 12$

<i>africanum</i>	c. 24	Pearson 1912	—	Trop. Africa
<i>gnemon</i>	{ 24	Coulter 1908	N	Malaya
	{ 48	EKJ unp.		

12 WELWITSCHIACEAE

WELWITSCHIA $x = (7)$

<i>bainesii (mirabilis)</i>	{ 42	Florin 1932	—	Trop. S.W. Africa
	{ 42, 84	Fernandes 1936		

DICOTYLEDONS

Group 1

MAGNOLIALES

1-7
ST

ANNONALES

8-9
ST

LAURALES

10-14
ST



Annona squamosa

I MAGNOLIACEAE

LIRIODENDRON $x = 19$

<i>chinense</i>		38	Janaki Ammal 1953c	HW	China
<i>tulipifera</i>	Tulip T.	38	Whitaker 1933c	BHSpW	S.E. U.S.A.

MANGLIETIA $x = 19$

<i>hookeri</i>		38	Janaki Ammal 1953c	H	Yunnan, Burma
<i>insignis</i>		38	" " "	H	E. Himal., China

MICHELIA $x = 19$

<i>champaca</i>	Champak	38	Janaki Ammal 1953c	HMPW	India—China
<i>compressa</i>		38	" " "	HP	Japan
<i>doltsopa</i>		38	" " "	H	Himalayas
<i>figo (fuscata)</i>	Banana Shrub	38	" " "	H	China
<i>lanuginosa</i>		38	" " "	H	Assam, Yunnan

PACHYLARNAX $x = 19$

<i>pleiocarpa</i>		38	Janaki Ammal 1953c	H	Assam
-------------------	--	----	--------------------	---	-------

TALAUMA $x = 19$

<i>hodgsoni</i>		38	Janaki Ammal 1953c	HT	Nepal
<i>phellocarpa</i>		38	" " "	H	Assam

MAGNOLIA $x = 19$

1. Evergreen

<i>delavayi</i>		38	Janaki Ammal 1953c	H	Yunnan
<i>griffithii</i>		38	" " "	H	Assam
<i>hamori</i>		38	" " "	H	Hispaniola
<i>nitida</i>		38	" " "	H	Yun., Tib., Burma
<i>pterocarpa</i>		38	" " "	H	E. Himal., Burma
<i>grandiflora</i>	Bull Bay	114	" " "	HPSp	S.E. U.S.A.
<i>schiedeana</i>		114	" " "	H	Mexico

2. Deciduous

<i>ashei</i>		38	" " "	H	Florida
<i>fraseri</i>		38	" " "	H	Alleghenies
<i>macrophylla</i>		38	" " "	H	S.E. U.S.A.
<i>tripetala</i>	Umbrella T.	38	" " "	HW	E. U.S.A.
<i>virginiana</i>	Am. Sweet Bay	38	" " "	H	"
<i>globosa</i>		38	" " "	H	Yunnan, Sikkim
<i>kobus</i>		38	" " "	H	Japan
<i>obovata</i>		38	" " "	HP	"
<i>officinalis</i>		38	" " "	HM	China
<i>rostrata</i>		38	" " "	H	Yunnan
<i>salicifolia</i>		38	" " "	H	Japan
<i>sieboldi</i>		38	" " "	H	Jap.—Manch.
<i>sinensis</i>		38	" " "	H	W. Szechuan
<i>stellata</i>		38	" " "	H	Japan
<i>tsarongensis</i>		38	" " "	H	Tibet
<i>wilsoni</i>		38	" " "	H	W. Szechuan
<i>acuminata</i>	Cucumber T.	76	" " "	HW	S.E. U.S.A.
<i>cordata</i>		76	" " "	H	Georgia
<i>liliflora</i>		76	" " "	HP	Java, China
<i>campbellii</i>		114	" " "	H	E. Himalayas
<i>dawsoniana</i>		114	" " "	H	W. Szechuan
<i>denudata</i>	Yulan	114	" " "	HPSp	China
<i>mollicomata</i>		114	" " "	H	Yunnan

MAGNOLIA (cont.)

<i>sargentiana</i>	114	Janaki Ammal 1953c	H	Yun., Szechuan
<i>sprengeri</i>	114	„ „ „	H	China
3. Garden Forms				
<i>watsoni</i> (<i>obovata</i> × <i>sieboldi</i>)	38	„ „ „	H	<i>cult</i>
<i>stellata rubra</i> (st. × <i>liliflora</i>)	57	„ „ „	H	„
<i>soulangeri</i> (<i>denudata</i> × <i>liliflora</i>)	95	„ „ „	H	„
„ var. <i>lenneana</i>	114	„ „ „	H	„
<i>veitchii</i> (<i>campbellii</i> × <i>denudata</i>)	114	„ „ „	H	„
<i>raffili</i> (camp. × <i>molli</i> .)	114	„ „ „	H	„

2 WINTERACEAE

ILLICIUM $x = 7$

<i>anisatum</i> Chinese A. T.	28	Morinaga <i>et al.</i> 1929	HOSp	E. Asia
(<i>religiosum</i>)				
<i>floridanum</i> Aniseed T.	28	Whitaker 1933c	HSp	S.E: U.S.A.

DRIMYS $x = ?$

<i>lanceolata</i>	{	26 Smith-White unp.	—	Tasmania
		28 Gulline unp.		
<i>aromatica</i> Pepper Tree		38? EKJ unp.	HSp	„
<i>winteri</i> Winter's Bark	c. 76	Whitaker 1933c	HM	S. America

3 SCHISANDRACEAE

SCHISANDRA $x = 7$

<i>chinensis</i>	28	EKJ unp.	H	N.E. Asia, Japan
<i>sphenanthera</i>	28	Whitaker 1933c	H	C. & W. China

KADSURA $x = 7$

<i>japonica</i>	28	Whitaker 1933c	H	Japan, Korea
-----------------	----	----------------	---	--------------

6 TROCHODENDRACEAE

EUPTELEA $x = 7?$

<i>polyandra</i>	14?	Sugiura 1936b	H	Japan
------------------	-----	---------------	---	-------

TROCHODENDRON $x = 19$

<i>aralioides</i>	38	Whitaker 1933c	H	Japan, Korea
-------------------	----	----------------	---	--------------

7 CERCIDIPHYLLACEAE

CERCIDIPHYLLUM $x = 19$

<i>japonicum</i>	38	Whitaker 1933c	W	Japan
------------------	----	----------------	---	-------

TETRACENTRON $x = 19$

<i>sinense</i>	38	Whitaker 1933c	—	China
----------------	----	----------------	---	-------

8 ANNONACEAE

ANNONA $x = 7$

<i>cherimolia</i>	Cherimoyer	{ 14 Kumar & R. 1941, EKJ*	F	Trop. America
		{ 16? Bowden 1948		
<i>muricata</i>	Sour-sop	{ 14 Kumar & R. 1941, EKJ*	F	" "
		{ 16? Bowden 1945a		
<i>reticulata</i>	Custard Apple	{ 14 Asana & A. 1945, EKJ*	F	" "
		{ 16? Bowden 1945a		
<i>squamosa</i>	Sweet-sop	{ 14 Kumar & R. 1941 14 Asana & A. 1945	FM	" "
		{ 16? Bowden 1945a 14 (28) Islam 1953		
<i>montana</i>		16? Bowden 1945a	—	Jamaica
<i>glabra</i> (<i>palustris</i>)	Alligator Pear	28 " " , EKJ*	Fs	Trop. America

CANANGIUM (CANANGA) $x = 8$

<i>odoratum</i>	Ylang Ylang	16 Bowden 1945a	HP	E. Trop. Asia
-----------------	-------------	-----------------	----	---------------

ARTABOTRYS $x = 8, 9$

<i>odoratissimus</i>	Climbing Y.Y.	{ 16 Asana & A. 1945 18 Bowden 1948, EKJ*	HMP	Trop. Asia
----------------------	---------------	--	-----	------------

ASIMINA* $x = 9$

<i>obovata</i> and 5 spp.		18 Bowden 1945a, 1948	—	Florida
<i>triloba</i>	Papaw	18, 27 " 1948	F	S.E. U.S.A.

POLYALTHIA $x = 9$

<i>longifolia</i>	Asoth	18 Asana & A. 1945	ShW	India
-------------------	-------	--------------------	-----	-------

SACCOPETALUM $x = 9$

<i>tomentosum</i>		18 Adatia & C. 1951	—	India
-------------------	--	---------------------	---	-------

ROLLINIA $x = ?$

<i>orthopetala?</i>		48 Bowden 1948	—	Trop. America
---------------------	--	----------------	---	---------------

9 EUPOMATIACEAE

EUPOMATIA $x = 10$

<i>bennettii</i>		20 A. T. Hotchkiss unp.	—	E. Australia
<i>laurina</i>		20 " "	W	" "

II LAURACEAE

CINNAMOMUM $x = 12$

<i>camphora</i>	Camphor Tree	24 Sugiura 1936b	MW	Jap, Form., China
<i>japonicum</i>	Khoga T.	24 " "	O	Japan
(<i>pedunculatum</i>)				
<i>linearifolium</i>	Chinese C.	24 EKJ*	MSp	China

CINNAMOMUM (cont.)

<i>loureiri</i>	Tonkin C.	24	Sugiura 1936b	MSp	Jap., Form.
<i>obtusifolium</i>	Tej C.	24	EKJ*	MSp	Himal., Burma
<i>sieboldii (burmanni)</i>		24	Täckholm & S. 1917	MSp	Java, Sum.
<i>zeylanicum</i>	Cinnamon	24	EKJ*	MSpW	S. Ind., Cey., Mal.

LINDERA (BENZOIN) $x = 12$

<i>benzoin (aestivale)</i>	Spice Bush	24	Jensen 1941b	HMP	N. America
<i>glauca</i>		24	Sugiura 1936b	MPSp	E. Asia
<i>praecox</i>		24	EKJ unp.	H	Japan

PERSEA* $x = 12$

<i>americana</i>	Avocado Pear	{ 24	Bowden 1940b,	FO	E: N. America,
		24	EKJ*		W. Indies
<i>drymifolia</i>	Mexican A.	24	Krishnaswamy & R. 1949	F	Mexico
<i>palustris (pubescens)</i>	Red Bay	24	Bowden 1945a	F	E: N. America
<i>borbonia</i> & 3 spp.	Swamp Bay	24	Bringhurst 1954	—	S.E: U.S.A.

UMBELLULARIA $x = 12$

<i>californica</i>	Calif. Bay	24	Bambacioni 1941	HSp	W: N. America
--------------------	------------	----	-----------------	-----	---------------

LAURUS $x = 12?$

<i>canariensis</i>	Canary Is. L.	36	Bambacioni 1940	H	Canary Is., Azores
<i>nobilis</i>	Sweet Bay	{ 42	Battaglia 1947c	HSp	Mediterranean
		48	EKJ unp.		

SASSAFRAS $x = 12$

<i>albidum (officinale)</i>		48	Bowden 1940b	MSp	N. America
-----------------------------	--	----	--------------	-----	------------

14 MYRISTICACEAE

MYRISTICA $x = 7?$

<i>fragrans</i>	Nutmeg	42	Simmonds 1954	MSp	E. Ind., Ceylon
-----------------	--------	----	---------------	-----	-----------------

Group II

RANALES

15-18

H(S)

BERBERIDALES

19-23

HS

ARISTOLOCHIALES

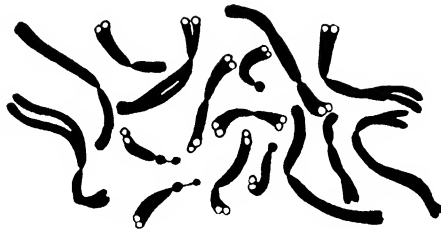
24-27

S

PIPERALES

28-31

HST



Clematis vitalba

15 RANUNCULACEAE

TRIBE I: PAEONIEAE

PAEONIA $x = 5$

<i>anomala</i>	10	Langlet 1927a	H	C. Asia
<i>broteri</i>	10	Stebbins 1938	H	Portugal
<i>brownii</i>	10	" "	H	W: N. America
<i>californica</i>	10	Walters 1952	H	California
<i>cambessedesii</i>	10	Dark 1936	H	Balearics
<i>clusii</i>	10	Barber 1941a	H	Crete
<i>delavayi</i>	10	Dark 1936	H	China
<i>daurica</i>	10	Barber 1941a	H	Crimea, Cauc.
<i>emodi</i>	10	Dark 1936	HM	Himalayas
<i>japonica</i>	10	" "	H	Japan
<i>lactiflora</i> (<i>albiflora</i>)	10	" "	HMR	N.E. Asia
<i>lutea</i>	10	Stern 1944	H	W. China
<i>mairei</i>	10	La Cour 1952	—	Yunnan
<i>mlokosewitschii</i>	10	Barber 1941a	H	Caucasus
<i>potanini</i>	10	Stern 1944	H	W. China
<i>rhodia</i>	10	" "	H	Rhodes
<i>smouthii</i>	10	Dark 1936	H	<i>cult</i>
<i>suffruticosa</i> Tree Pacony	10	Stebbins 1938	H	China, Tib., Bhut.
<i>tenuifolia</i>	10	" "	H	Transsyl.—Cauc.
<i>veitchii</i>	10	Gregory 1941	H	China
<i>mascula</i> (<i>corallina</i>)	10, 20	Barber 1941a	HM	S. Europe
<i>obovata</i>	10, 20	Sinoto 1938	H	E. Asia
<i>officinalis</i>	{ 10	Dark 1936,	HM	S. Europe
	20	Gregory 1941		
<i>arietina</i>	20	Langlet 1928	H	S.E. Eur., Asia M.
<i>coriacea</i>	20	" 1927a	H	S. Spain, Morocco
<i>humilis</i>	20	Barber 1941a	H	S. Europe
<i>mollis</i>	20	Stern & B. 1945*	H	Siberia
<i>peregrina</i>	20	Dark 1936	H	S. Europe
<i>russi</i>	20	Barber 1941a	H	W. Med. Is.
<i>tenuifolia hybrida</i>	20	Dark 1936	H	<i>cult</i>
<i>wittmanniana</i> (<i>tomentosa</i>)	20	Stebbins 1938	H	N.W. Caucasus

TRIBE II: HELLEBOREAE

NIGELLA $x = 6$

<i>arvensis</i> Wild Fennel	12	Gregory 1941	MSp	Eur., S.W. Asia
<i>ciliaris</i>	12	Pereira 1942	—	Syria, Cyprus
<i>damascena</i> Love-in-a-Mist	12	Gregory 1941	HMSp	Medit.
<i>gallica</i> (<i>hispanica</i>)	12	Pereira 1942	H	Spain, N. Africa
<i>garidella</i> (<i>nigellastrum</i>)	12	Gregory 1941	—	Europe
<i>orientalis</i>	12	" "	H	Asia Minor
<i>sativa</i> Black Cumin	12	" "	HMSp	Medit.
<i>viridis</i>	12	" "	—	--

KOMAROFFIA (NIGELLA) $x = 7$

<i>integrifolia</i> (<i>N. diversifolia</i>)	14	Pereira 1942	M	Turkestan
--	----	--------------	---	-----------

ANEMOPSIS $x = 8$

<i>macrophylla</i>	16	Langlet 1932	H	Japan
--------------------	----	--------------	---	-------

CIMICIFUGIA $x = 8$

<i>americana</i>	American B.	16	Langlet 1932	H	E: N. America
(<i>cordifolia</i>)					
<i>dahurica</i>		16	" "	H	C. Asia—Japan
<i>foetida</i>	Bugbane	16	Nakajima 1933	HIM	Russia—Japan
<i>japonica</i> (<i>acerina</i>)		16	Langlet 1932	H	Japan
<i>racemosa</i>	Black Snake Root	16	Gregory 1941	HM	E: N. America

ERANTHIS $x = 8$

<i>cilicica</i>		16	Langlet 1932	H	Asia M., Syria
<i>hyemalis</i>	Winter Aconite	16	Gregory 1941	HM	S. Europe

ACONITUM* $x = 8$

<i>exclusum</i>		16	S. & S. 1938	H	Russia, Siberia
<i>lycoctonum</i>	Wolf Bane	16	Schafer & L.C. 1934	HM	Eur., N. Asia—China
<i>orientale</i>	Caucasian M. and 7 spp.	16	" " "	HM	Cauc.—Persia
<i>septentrionale</i>		16	Langlet 1927a	H	N. Europe
<i>uncinatum</i>	Climbing M.	16	Gregory 1941	H	N. America
<i>variegatum</i>		16	Leszczak 1950	H	E. Alps
<i>paniculatum</i>		{ 16	Schafer & L.C. 1934	H	S. Europe
		32	Langlet 1927a		
<i>stoerkianum</i>		24	Schafer & L.C. 1934	HM	cult
<i>altaicum</i>		32	S. & S. 1938	—	Altai
<i>anglicum</i>		32	Schafer & L.C. 1934	M	Britain
<i>anthora</i>		32	" " "	H	S. Eur. Mts., Cauc.
<i>delavayi</i>		32	Langlet 1927a	H	Yunnan
<i>firmum</i>		32	Skalinska 1950a	H	E. Europe
<i>fischeri</i>	and 4 spp.	32	Sakai 1933	H	Kamchatka
<i>napellus</i>	Monkshood	32	Gregory 1941	HM	N. Temp.
<i>volubile</i>		32	Schafer & L.C. 1934	H	Altai
<i>palmatum</i>	Bikhma	48	" " "	M	Himalayas
<i>wilsonii</i>	Azure M.	64	" " "	HM	E. China
species		96	" " "		

ACTAEA $x = 8$

<i>alba</i>	White Baneberry	16	Gregory 1941	H	E: N. America
<i>rubra</i>	Red B.	16	Langlet 1932	H	N. America
<i>spicata</i>	Black B.	{ 16	" 1927a	HM	N. Eurasia
		c. 32	Mattick, T. 1950		

DELPHINIUM* $x = 8$

<i>ajacis</i>	Rocket Larkspur	16	Gregory 1941	HM	S. Europe
	& 11 spp.				
<i>brachycentrum</i>		16	Langlet 1932	—	Kamchatka
<i>brunonianum</i>	Musk L.	16	Lewitsky 1931b	H	Himalayas
<i>cardinale</i>	Scarlet L.	16 (32)	Mehlquist <i>et al.</i> '43	H	California
<i>cardiopetalum</i>		16	Lewitsky 1931b	H	Medit.
<i>decora</i>	& 16 spp.	16	Lewis <i>et al.</i> 1951	H	California
<i>nudicaule</i>	Orange L.	16	Lawrence 1936	HM	"
<i>speciosum</i>		16	Langlet 1927a	H	Cauc., Persia
<i>tatsiense</i>		16	Lewitsky 1931b	H	Szechuan
<i>zalil</i>	& 2 spp.	16	Propach 1939	DHM	Persia

DELPHINIUM (cont.)

<i>duhmbergii</i>		{ 16 Propach 1939	—	S. Russia
		{ 32 Gregory 1941	—	California
<i>gypsophilum</i>		16, 32 Lewis <i>et al.</i> 1951	—	
<i>hanseni</i>		16, 32 „ „ „	—	„
<i>variegatum</i>	Royal L.	16, 32 „ „ „	—	„
<i>staphysagria</i>	Stavesacre Seed	{ 16 Hocquette 1922	HIM	Medit.
		{ 32 Lewitsky 1931b		
<i>moerheimii</i>		24 Lawrence 1936	H	<i>cult</i>
<i>bulleyanum</i>	& 6 spp.	32 Gregory 1941	—	China
<i>oxysepalum</i>		32 Skalinska 1950a	—	E. Europe
<i>ruysii</i>		32 Lawrence 1936	H	<i>cult</i>
<i>belladonna</i>		48 Langlet 1927a	H	„
<i>lamaritini</i>		48 Lawrence 1936	H	„
Garden forms	16, 24, 32, 48	Propach 1939	H	„

TROLLIUS x -- 8

<i>acaulis</i>		16 Langlet 1932	H	Himalayas
<i>albiflorus</i>		16 „ „	H	W: U.S.A.
<i>asiaticus</i> (& <i>giganteus</i>)		16 „ „	H	N. & E. Asia
<i>europaeus</i>	*Globe Flower	16 „ „	H	Eur., Cauc.
<i>japonicus</i>		16 Lewitsky 1931b	H	Japan
<i>ranunculinus</i> (<i>caucasicus</i>)		16 Langlet 1932	H	Cauc., Armenia
<i>yunnanensis</i>		16 Gregory 1941	H	China, Yunnan
<i>laxus</i> (<i>americanus</i>)		32 Langlet 1932	H	N. America

CALTHA x -- 8

<i>cornuta</i>		16 Leoncini 1951	--	S. Europe
<i>laeta</i>		{ 32 „ „	H	S.E. Eur.—Himal.
		{ 56-64 „ 1952		
<i>palustris</i>	Marsh Marigold	32, 48, 56 S. & S. '38, '41	HM	North Regions
		28 L. & L. 1948		
	32, 48, 53-60	+ 0-6B Reese 1954		
		56-64 Leoncini 1952		
<i>leptocephala</i>		48 Langlet 1932	HM	W: N. America
<i>radicans</i>		48 + 0-2B L. & L. 1948	H	Scotland
<i>polypetala</i>		64 Langlet 1932	M	Asia M., Persia

HELLEBORUS* x -- 8

<i>abschasicus</i>		32 Gregory 1941	H	Caucasus
<i>foetidus</i>	& 7 spp.	32 Langlet 1927a, 1932	HM	W. & S. Europe
<i>lividus</i>		32 EKJ unp.	H	Balearics

TRIBE III: THALICTREAE

ANEMONELLA x -- 7

<i>thalictroides</i>	Rue Anemone	{ 14 Gregory 1941	H	N. America
		{ 42 Kuhn 1928a		

ISOPYRUM x -- 7

<i>fumarioides</i>		14 Gregory 1941	—	Eur., Asia M.
--------------------	--	-----------------	---	---------------

KUMLIENIA x -- 7

<i>hystricula</i>		14 Jakob 1949	—	N.W: N. Amer.
-------------------	--	---------------	---	---------------

THALICTRUM* x -- 7

<i>alpinum</i>		14 L. & L. 1944b	H	N. Temp., Arctic
----------------	--	------------------	---	------------------

THALICTRUM (cont.)

<i>foetidum</i>	14	Langlet 1927a	H	C. Europe
<i>foliosum</i>	14	" "	—	Himalayas
<i>montanum</i>	14	Kuhn 1928a	—	Europe
<i>petaloideum</i>	14	" "	H	N. Asia
<i>yezoense</i>	14	M. & S. 1935	—	Japan
<i>aquilegifolium</i>	14, 28	Langlet 1927a	H	Eur., N. Asia
	14	Kuhn 1928a		
<i>przewalski</i>	70	Langlet 1927a	—	China
<i>dipterocarpum</i>	28	Kuhn 1928a	H	W. China
<i>lucidum (angustifolium)</i>	28	" "	H	Europe
<i>speciosissimum (glaucum)</i>	28	" "	H	Spain, Port., N.W. Africa
<i>tuberosum</i> & 5 spp.	28	" "	H	S. W. Europe
<i>fendleri</i>	28, 56, c. 70	Clausen <i>et al.</i> 1940	H	W: N. America
<i>flavum</i> Yellow Meadow Rue	28	Gregory 1941	II	Europe
	84	Kuhn 1928a		
<i>exaltatum (flavum)</i>	28, 35	" "	—	"
<i>dioicum</i>	28	Jensen 1944	II	E: N. America
	42	Kuhn 1928a		
<i>calabricum</i> & 10 spp.	42	" "	H	C. Italy
<i>pauciflorum</i>	42	Langlet 1927a	—	Himalayas
<i>rubellum</i>	42	" "	—	Eur., N. Asia
<i>dasycarpum (purpurascens)</i>	28	Gregory 1941	H	U.S.A.
	42	Langlet 1927a		
<i>minus</i>			II	Eur., N. Afr., Asia
<i>as majus</i>	28	Gregory 1941		
<i>flexuosum</i>	42	Kuhn 1928a		
<i>rariflorum</i>	56, 112	Langlet 1927a		
<i>kemense</i>	70	" "		
	28	Kuhn 1928a		
<i>simplex</i>	56	Langlet 1927a	—	Eur., N. Asia
	70	Kuhn 1928a		
	112	Langlet 1927a		
<i>coriaceum</i>	70	Gregory 1941	—	N. America
	140	Jensen 1944		
<i>polygamum (corynellum)</i>	84	Jensen 1944	H	E: N. America
	154	Gregory 1941		
<i>revolutum</i>	c. 133	" "	—	N. America

AQUILEGIA* x = 7

<i>akitensis</i>	14	Sakai 1935	H	Japan
<i>alpina</i> & 9 spp.	14	Gregory 1941	HM	Europe
<i>caerulea</i>	14	Winge 1925	H	W: N. America
<i>flabellata</i>	14	Skalinska 1931	H	Japan
<i>formosa (truncata)</i>	14	" "	H	W: N. America
<i>haylodgensis</i>	14	Langlet 1927a	H	<i>cult</i>
<i>nigricans (vulgaris)</i>	14	Winge 1925	H	Eur., Persia
<i>vulgaris</i> Columbine	14, 28	Pereira 1948	HM	Eur., N. Afr., Temp. Asia
<i>v. olympica</i>	16?	S. & S. 1940	H	S.W. Asia
<i>hirsutissima</i>	28	Gregory 1941	H	<i>cult</i>

TRIBE IV: ANEMONEAE

ANEMONE (PULSATILLA)* $x = 7, 8$

$x = 7$

<i>acutiloba</i>		14	Langlet 1932	H	E: N. America
<i>debilis</i>		14	Sakai 1935	—	Siberia
<i>demissa</i>	Drooping A.	14	Langlet 1936	H	Himalayas
<i>flaccida</i>		14	M. & S. 1935	H	Japan, China
<i>narcissiflora</i>		14	Sakai 1934	H	N. Temp.
<i>hepatica</i>		{ 14	Gregory 1941	HM	Eur., Asia, E: N.
		28	Langlet 1927a		America

$x = 8$

<i>albana</i>	& 3 spp.	16	Langlet 1932	H	Cauc., Persia
<i>alpina</i>	& 4 spp.	16	Rosenthal 1936	H	S. Eur., Cauc.
<i>altaica</i>	& 3 spp.	16	Guinochet 1935	H	Siberia
<i>apennina</i>		16	Bøcher 1945	H	S. Europe
<i>caroliniana</i>	& 5 spp.	16	Moffett 1932b	H	E: N. America
<i>chrysantha</i>		16	S. & S. 1940	—	Caucasus
<i>cernua</i>		16	M. & S. 1935	H	Japan
<i>coronaria</i>	Poppy A.	16	Guinochet 1935	H	Medit.—C. Asia
<i>japonica</i>	Japanese A. & 4 spp.	16	Gregory 1941	H	China, Japan

<i>riparia</i>		16	Dahl 1937	—	N. America
<i>sieboldii</i>		16	Miduno 1943	—	China
<i>yunnanensis</i>		16	" "	—	"

<i>blanda</i>		16	Langlet 1927a	H	S.W. Asia
<i>v. rosea</i>		32	Moffett 1932b		

<i>fulgens</i>	Scarlet A.	{ 16	" "	H	Medit.
		32	Langlet 1932		

<i>montana</i>		{ 16	Rosenthal 1936	H	S. Eur.—Cauc.,
		24	Guinochet 1935		Manch.
		32, 48	Moffett 1932b		

<i>sylvestris</i>	Snowdrop A.	{ 16	Gajewski 1946	H	Eur.—Turkestan
		32	Gregory 1941		

<i>transsylvanica (angulosa)</i>		{ 28? Gregory 1941			
		16	" "	H	Roumania
		32	Rosenthal 1936		

<i>decapetala</i>		24	Moffett 1932b	H	N. & S. Amer.
-------------------	--	----	---------------	---	---------------

<i>baldensis</i>		{ 24	" "	H	Eur., N. Amer.
		32	Gajewski 1947		

<i>nemorosa</i> Wood A.		{ 24	Guinochet 1935	H	Europe
		30, 37, 45, 46	Bernström 1946		
		32	Moffett 1932b		

<i>janczewskii (multifida × sylvestris)</i>		24, 48 (42-47)	Gajewski 1946	H	<i>cult</i>
---	--	-------------------	---------------	---	-------------

<i>armena</i>		32	Langlet 1932	H	Asia Minor
<i>bogenhardiana</i>		32	Zimmerman 1932	—	Europe
<i>halleri</i>		32	Rosenthal 1936	H	C. Europe
<i>magellanica</i>		32	Moffett 1932b	H	S. Chile
<i>multifida</i>		32	" "	H	N. America
<i>palmata</i>		32	Langlet 1932	H	S.W. Europe
<i>pulsatilla</i>	Pasque Flower	32	Gregory 1941	H	Europe
<i>ranunculoides</i>		32	Bernström 1946	H	Eur., W. Asia

(30-33)

ANEMONE (cont.)

<i>rubra (pulsatilla)</i>	32	Rosenthal 1936	H	Eur., Siberia
<i>rupicola</i>	32	Moffett 1932b	H	Himalayas
<i>slavica</i>	32	Miduno 1943	—	Europe
<i>trifolia</i>	c. 30, 32	Langlet 1932	H	"

RANUNCULUS* $x = 7, 8$

$x = 7$				
<i>aduncus (villarsii) & 3 spp.</i>	14	Langlet 1936	—	S. Europe
<i>cassius</i>	14	Gregory 1941	—	Asia M., Syria
<i>parviflorus</i>	14	Neves 1944	—	W. Eur., Medit.
	28	Langlet 1927a		
<i>constantinopolitanus</i>	14	" 1936	—	Asia Minor
	42	Larter 1932		
<i>californicus</i>	28	Coonen 1939	—	California
<i>hornemanni & 1 sp.</i>	28	Langlet 1936	—	N. Amer.
<i>rupestris & 3 spp.</i>	28	Larter 1932	—	Spain
<i>tuberosus (acris)</i>	28	Langlet 1936	—	N. Temp.
<i>acris</i> Meadow	{ 14+0-10B	Langlet 1927a	H	N. Temp., S. Afr.
Buttercup		28, 56		
$x = 7 \text{ and } 8$				
<i>bulbosus</i>	14	M. & S. 1935	H	Eur., W. Asia
	16	Neves 1944		
<i>chius</i>	14	Larter 1932	H	S. Eur., Asia M.
	16	Gregory 1941		
<i>lanuginosus</i>	14	Langlet 1927a	—	Eur., Caucasus
	28, 32	Mattick, T. 1950		
<i>nelsoni</i>	14	Larter 1932	—	W: N. America
	16	Gregory 1941		
<i>platanifolius (aconitifolius)</i>	14	Langlet 1927	H	Europe
	16	Skalinska 1950a		
<i>polyanthemos</i>	14	Felfoldy 1947a	—	Eur., Caucasus
	16	Reese 1953		
$x = 8$				
<i>abchasicus & 1 sp.</i>	16	S. & S. 1940, 1941	—	Caucasus
<i>alpestris & 10 spp.</i>	16	Langlet 1927, '32, '36	H	Eur. Alps
<i>broteri & 3 spp.</i>	16	Larter 1932	H	Spain, Portugal
<i>cassubicifolius</i>	16	Haflinger 1943	—	Europe
<i>circinatus</i>	16	Scheerer 1939	—	Eur., N. Amer.
<i>cymbalaria</i>	16	Bøcher & L. 1950	H	N. Temp.
<i>hakkodensis & 2 spp.</i>	16	M. & S. 1935	—	Japan
<i>hederaceus & 2 spp.</i>	16	Bøcher 1938b	—	W. & S. Europe
<i>lappaceus</i>	16	Curtis unp.	—	Australia
<i>nemorosus</i>	16	Gregory 1941	—	S. Europe
<i>ophioglossifolius & 5 spp.</i>	16	Neves 1944	—	W. Eur., Medit.
<i>rhomboides</i>	16	Coonen 1939	—	N. America
<i>asiaticus</i> Turban B.	16	Nakajima 1936	H	S.W. Asia
	32	Larter 1932		
<i>auricomus (Apo.) Goldilocks</i>	16, 32	Bøcher 1938b	—	Eur., N. Asia
	32	Haflinger 1943		
<i>breynianus (nemorosus)</i>	16, 32	Mattick, T. 1950	H	W. Alps
<i>confervoides</i>	16	L. & L. 1948	—	Europe
	32	Bøcher & L. 1950		
<i>ficaria</i> Lesser Celandine (2x, 3x, 4x, 5x, 6x)	16, 24	Neves 1942	HM	Eur., Cauc.
	16 + 2B	Larter 1932		
	32	Bøcher 1938b		
	c. 40	Maude 1939		

RANUNCULUS (cont.)

<i>v. calthaefolius</i>		48	Rutland 1941		
<i>glacialis</i>		{ 16	Bøcher 1938b	H	Alps & Arctic
		32	L. & L. 1948		
<i>montanus</i>		16, 24, 32	Mattick, T. 1950	H	Europe
<i>repens</i>	Creeping B.	{ 16, 32	M. & S. 1935	H	N. Temp.
		32	Neves 1944		
<i>sardous</i>		{ 16	Langlet 1932		Eur., Asia M.,
		18?	Pólya 1948	—	N. Africa
		48	Neves 1944		
<i>alnetorum</i>	& 11 spp.	32	Haflinger 1943	—	Europe
<i>aquatilis</i>	Water Crowfoot	32	Bøcher 1932	H	Temp.
<i>flammula</i>	Lesser Spearwort	32	Neves 1944	—	Eur., Azores
	& 3 spp.				
<i>hyperboreus</i>		32	Bøcher & L. 1950	—	N. & Arctic
<i>lenormandii</i>	& 2 spp.	32	Larter 1932	—	W. Europe
<i>monophyllus</i>		32	S. & S. 1938	—	Altai
<i>monspessulanus</i>	& 2 spp.	32	Coonen 1939	—	Europe
<i>reptans</i>	& 2 spp.	32	Bøcher 1938b	—	N. & C. Europe
<i>sceleratus</i>	Blister B.	32	Gregory 1941	M	" "
<i>trachycarpus</i>	& 1 sp.	32	Langlet 1927a	—	S.W. Asia
<i>septentrionalis</i>	Swamp B.	{ 32	Coonen 1939	—	Arctic
		64	Gregory 1941		
<i>falcatus</i>		40	Langlet 1932	—	Eur., Himalayas
<i>pulchellus</i>		40	S. & S. 1938	—	Himal.—Sib.
<i>stricticaulis</i>		40	Haflinger 1943	—	Europe
<i>nivalis</i>		40, 48, 56	L. & L. 1948	HM	N. & Arctic
<i>trilobus</i>		{ 42	Larter 1932	—	Medit.
		48	Gregory 1941		
<i>affinis</i>		48	Bøcher & L. 1950	—	Arctic
<i>allemannii</i>		48	Haflinger 1943	—	Europe
<i>apiifolius</i>		48	Langlet 1932	—	Argentina
<i>dichotomiflorus</i>		48	Neves 1944	—	Spain
<i>muricatus</i>		48	" "	—	Eur., S.W. Asia
<i>sulphureus</i>		{ c. 56	Bøcher 1938b	M	Arctic
		96	L. & L. 1948		
<i>lingua</i>	Great Spearwort	128	Bøcher 1938b	H	Eur., Sib.

ADONIS x = 8

<i>vernalis</i>	False Hellebore	16	Langlet 1927a	HM	Europe
<i>dahurica</i> (3x)		24	" "	—	N. Asia
<i>autumnalis</i>	Pheasant-eye	32	Gregory 1941	H	S. Eur., S.W. Asia
<i>amurensis</i> (5x)		40	Sugiura 1931	HM	Manch., Japan

CALLIANTHEMUM x = 8

<i>coriandraefolium</i>		16	Langlet 1932	H	S. Europe
<i>rutifolium</i> (anemonoides)		32	" "	H	Austria
<i>miyabeaenum</i>		32	Sakai 1935	—	Japan

CLEMATIS* x = 8

<i>addisonii</i>	& 11 spp.	16	Gregory 1941	H	S.E. U.S.A.
<i>campaniflora</i>	& 8 spp.	16	Meurman & T. 1939	H	Portugal
<i>hilarii</i>		16	Covas & S. 1947	H	Brazil
<i>indivisa</i>		16	Hair 1942	H	New Zealand
<i>integrifolia</i>		16	Meurman & T. 1939	H	S. Europe

CLEMATIS (cont.)

<i>jackmannii</i>		16	Meurman & T. 1939	H	<i>cult</i>
<i>koreana</i>		16	" "	H	Korea
<i>lasiantha</i>	Pipestem C.	16	" "	H	W: N. Amer.
<i>ligusticifolia</i>		16	" "	H	"
<i>montana</i>		16	" "	H	Himalayas
<i>stans</i>	& 2 spp.	16	Langlet 1927a	H	Japan
<i>vitalba</i>	Traveller's Joy	16	Maude 1940	H	Eur., N. Afr., Cauc.
<i>paniculata</i>	{	16, 64	Geogry 1941	H	Japan
<i>mandschurica</i>		48	Meurman & T. 1939		
		32	" "		

MYOSURUS $x = 7$

<i>minimus</i>	Mousetail	c. 28	Ehrenberg 1945	H	Eur., N. Afr., S.W. Asia
----------------	-----------	-------	----------------	---	--------------------------

KNOWLTONIA $x = 8$

<i>vesicatoria</i>		48	Langlet 1932	H	S. Africa
--------------------	--	----	--------------	---	-----------

TRAUTVETTERIA $x = 8$

<i>carolinensis</i>	False Bugbane	16	Langlet 1932	H	N. America
<i>japonica</i>		16	M. & S. 1935	H	Japan

TRIBE V: COPTIDAE

COPTIS $x = 9$

<i>japonica</i>		18	Langlet 1932	H	Japan
<i>trifolia</i>		18	" "	H	N.E. Asia, Alaska

ZANTHORRHIZA $x = 9$

<i>apiifolia</i>	Shrub Yellow-root	36	Langlet 1932	H	N. America
------------------	-------------------	----	--------------	---	------------

TRIBE VI: HYDRASTIDAE

GLAUCIDIUM $x = 10$

<i>palmatum</i>		20	M. & S. 1935	H	Japan
-----------------	--	----	--------------	---	-------

HYDRASTIS $x = 13$

<i>canadensis</i>	Golden Seal	26	Langlet 1928	HM	N. America
-------------------	-------------	----	--------------	----	------------

17 CERATOPHYLLACEAE

CERATOPHYLLUM $x = ?$

<i>demersum</i>	Hornwort	c. 24	Langlet & S. 1927	—	Cosmop.
<i>submersum</i>		{ 40	Wulff 1938	—	Eur., Trop. Asia
		72	Jedrychowska & S. '34		

18 NYMPHAEACEAE

NELUMBO (NELUMBIUM) $x = 8$

<i>lutea</i>	Amer. Lotus	16	Langlet & S. 1927	HR	N. Am., W. Indies
<i>nucifera</i>	Lotus	16	" "	HVM	N. Afr., Tr. Asia
<i>(speciosum)</i>					

VICTORIA $x = 10, 12$					
<i>regia</i>	Giant Water Lily	20	Langlet & S. 1927	HN	Amazon
<i>cruziana</i>	Santa Cruz W.L.	24	Heitz 1932	H	Bolivia, Paraguay
CABOMBA $x = 12$					
<i>caroliniana</i>	Fish Grass	24	Nitzschke 1914	H	S.E. U.S.A.
NYMPHAEA $x = 14$					
<i>capensis</i>	Cape Water Lily	28	Langlet & S. 1927	HR	S. & E. Afr., Mad.
<i>stellata</i>	Macongee Congee	28	„ „	HRV	S. & E. Asia
<i>flava (mexicana)</i>		56	„ „	HR	S: U.S.A.
<i>lotus</i>	Egyptian W.L.	56	„ „	HRV	O.W. Tropics
<i>rubra</i>	Red W.L.	56	„ „	HR	India
<i>odorata</i>	American W.L.	84	„ „	HMR	N. America
<i>tuberosa</i>	Magnolia W.L.	84	„ „	HR	N.E. U.S.A.
		84	„ „		
<i>alba</i>	Flatterdock	c. 105	Ehrenberg 1945	BDH	Europe
		112	Langlet 1936		
<i>as candida</i>		c. 160	L. & L. 1942		
<i>tetragona</i>	Pygmy W.L.	112	Langlet & S. 1927	HR	Amer., Asia, Austr.
<i>gigantea</i>	Australian W.L.	224	Langlet 1936	HRV	Australia
NUPHAR $x = 17$					
<i>advena</i>	Spatterdock	34	Langlet & S. 1927	H	N. America
<i>japonica</i>		34	„ „	H	Japan
<i>lutea</i>	Yellow W.L.	34	Y. Heslop-Harrison 1953b	HR(B)	N. Temp.
<i>microphylla</i>		34	Langlet & S. 1927	H	E: U.S.A.
<i>pumila (minima)</i>		34	Y. Heslop-Harrison 1953b	H	Eur., N. Asia
<i>intermedia</i> (? <i>lutea</i> \times <i>pumila</i>)		34	„ „	—	N. & C. Europe
EURYALE $x = 29$ (12 + 17) ?					
<i>ferox</i>	Gorgon W.L.	58	Langlet & S. 1927	HMNV	India, China

19 BERBERIDACEAE

ACHLYS $x = 6$					
<i>japonica</i>		12	M. & S. 1935	H	Japan
DIPHYLLEIA $x = 6$					
<i>cymosa</i>		12	Langlet 1928	H	S.E. U.S.A.
<i>gravi</i>	Umbrella Leaf	12	M. & S. 1935	H	Japan
ACERANTHUS (EPIMEDIUM) $x = 6$					
<i>diphyllus</i>	Maplewort	12	Suzuka 1950a	H	Japan
EPIMEDIUM $x = 6$					
<i>alpinum</i>		12	Maude 1939	H	S. & C. Europe
<i>grandiflorum (macranthum)</i>		12	Langlet 1928	H	Japan, cult
<i>pinnatum</i>		12	„ „	H	Persia
<i>youngianum (musschianum)</i>		12	„ „	H	cult

JEFFERSONIA $x = 6$					
<i>diphylla</i> (<i>binata</i>)	12	Langlet 1928	H	E: N. America	
<i>dubia</i>	12	„ „	H	E. Asia	
PODOPHYLLUM $x = 6$					
<i>emodi</i> Indian P.	12	Langlet 1928	HM	Himalayas	
<i>leichtlinii</i> ?	12	„ „		—	
<i>peltatum</i> May Apple	12	„ „	HM	N. America	
<i>versipelle</i>	12	Darlington 1936a	M	China	
VANCOUVERIA (EPIMEDIUM) $x = 6$					
<i>hexandra</i>	12	Langlet 1928	H	W. N. America	
BONGARDIA $x = 6$					
<i>chrysogonum</i>	14	Tören 1950	H	Syria, Persia	
RANZANIA $x = 7$					
<i>japonica</i>	14	Miyaji 1930	—	Japan	
CAULOPHYLLUM $x = 8$					
<i>robustum</i>	16	M. & S. 1935	H	Manchuria	
<i>thalictroides</i> Blue Cohosh	16	Langlet 1928	H	N. America	
NANDINA $x = 10$					
<i>domestica</i>	20	Sugiura 1936b	H	China, Japan	
MAHONIA $x = 14$					
<i>aquifolium</i> Mahonia	28	Dermen 1931b	BFH	W: N. America	
<i>repens</i>	28	„ „	FH	„	
BERBERIS* $x = 14$					
<i>canadensis</i> American B. & 6 spp.	28	Dermen 1931b	F	N. America	
<i>candidula</i>	28	Vaarama 1947b	H	W. Hupeh	
<i>cretica</i> Parveritshia	28	Giffin 1936	D	Crete	
<i>darwinii</i> & 14 spp.	28	„ „	FH	Chile, Patag.	
<i>gagnepainii</i>	28	Vaarama 1947b	H	W. Hupeh	
<i>julianae</i>	28	„ „	H	„	
<i>sargentiana</i>	28	„ „	H	„	
<i>stenophylla</i>	28	„ „	H	<i>cult</i>	
<i>verruculosa</i>	28	„ „	H	W. Szechuan	
<i>vulgaris</i> Common B.	28	Langlet 1928	DFHM	Eur., Temp. Asia	
<i>actinacantha</i>	56	Vaarama 1947b	H	Chile	
<i>buxifolia</i> Magellan B.	56	„ „	FH	Patagonia	
<i>v. nana</i> ?	?				
<i>integerrima</i>	56	Dermen 1931b	H	Turkestan	
<i>turcomanica</i>	56	Tischler 1928	H	S. Asia Minor	
MAHONIA × BERBERIS					
<i>M. aquifolium</i> × <i>B. sargentiana</i>	28	Levan 1944b	H	<i>cult</i>	

21 LARDIZABALACEAE

LARDIZABALA $x = (7) 14$				
<i>bitermata</i>	28	Langlet 1928	H	Chile

AKEBIA $x = (8)$ 16				
<i>quinata</i> Fiveleaf A.	32	Velser 1913	H	China
<i>lobata</i> (<i>trifoliata</i>)	32	Kuwada, T. 1927a	H	Japan
DECAISNEA $x = 15$				
<i>fargesii</i>	30	Simonet & M. 1932	H	China

23 MENISPERMACEAE

TINOSPORA $x = 12, 13?$				
<i>cordifolia</i>	{ 24	Joshi 1934	M	India
	26	Abraham 1942		
COCCULUS $x = 13, 19?$				
<i>laurifolius</i>	26	Bowden 1945b	H	Himal., E. Asia
<i>pendulus</i> (<i>leaebe</i>)	26	Hagerup 1932	—	E. Tr. Asia, Trop. Africa
<i>villosus</i>	38	Joshi 1934	M	India, Tr. Africa
<i>trilobus</i>	{ 50	Nakajima 1937	H	Japan, China,
	52	Bowden 1945b		Philippines
<i>carolinus</i> Car. Moonseed	78	„ „	H	E: U.S.A.
MENISPERMUM $x = 13$				
<i>canadense</i>	52	Lindsay 1930	H	E: N. America
<i>dahuricum</i>	52-54	Langlet 1928	H	N. China

24 ARISTOLOCHIACEAE

ARISTOLOCHIA $x = 6, 7$				
<i>bracteata</i>	12	Venugopalan 1949	—	India
<i>indica</i>	12	„ „	M	„
<i>elegans</i> Calico Flower	14	„ „	H	Brazil
<i>clematidis</i> Birthwort	14	Samuelsson 1914	HM	Eur., Cauc., Asia M.
<i>fimbriata</i>	14	Täckholm & S. 1918	HM	Brazil
<i>macrophylla</i> Dutchman's Pipe	28	„ „	H	E: N. America
(<i>sipho, durior</i>)				
ASARUM $x = ?$				
<i>dilatatum</i> Snakeroot	24	Tanaka 1935	Sp	Japan
as <i>dimidiatum</i>				
<i>europaeum</i> Asarabacca	{ c. 24	Täckholm & S. 1928	M	Eur., W. Asia
	40	Ehrenberg 1945		
HETEROTROPA (ASARUM)* $x = 12$				
<i>costata</i> & 21 spp.	24	Tanaka 1935	H	Japan
<i>serpens</i>	36	„ „	H	cult
<i>megacalyx</i>	48	„ „	H	Japan

25 CYTINACEAE (RAFFLESIIACEAE)

MITRASTEMON $x = 20$				
<i>kawa-sasakii</i>	40	Watanabe 1935	Par	Japan
<i>yamamotoi</i>	40	„ 1934	Par	„

28 PIPERACEAE

PEPEROMIA $x = 8, 11, 12$

<i>sintenisii</i>	16	Brown 1908	—	W. Indies
<i>sandersii</i> (<i>arifolia</i>)	24	Sugiura 1936a	H	Brazil
<i>metallica</i>	24	Abele 1923	—	Peru
<i>pellucida</i>	c. 24	Johnson 1914	HM	E. Indies
<i>resediflora</i>	24	Häuser 1916	—	Peru
<i>verschaffeltii</i>	24	Abele 1923	—	Brazil
<i>maculosa</i>	44	Martinoli 1948	H	Trop. America

PIPER $x = 12, 14, 16$

<i>chaba</i>	24	EKJ*	DM	India, Malaya
<i>longum</i> Long Pepper	24	Tjio 1948	SpM	" "
<i>subpelatum</i> (<i>umbellatum</i>)	24	Johansen 1931b	Sp	S.E. Asia
<i>geniculatum</i>	28	Maugini 1950	—	W. Indies
<i>unguiculatum</i>	28	" "	—	Peru
<i>medium</i>	28	Maugini 1953	—	Mexico
<i>betle</i> Betel	32	Johnson 1910, EKJ*	Sp	India
<i>nigrum</i> Pepper	c. 128	EKJ*	Sp	"

29 SAURURACEAE

SAURURUS $x = 11$

<i>cernuus</i> Lizard's Tail	22	Baldwin & S. 1949a	H	E. N. America
<i>chinensis</i> (<i>loureiri</i>)	22	Suzuka 1950a	H	China, Japan

HOULTTUYNIA $x = ?$ (Apomixis)

<i>cordata</i>	c. 96	Okabe 1934	H	Himalaya—Japan
----------------	-------	------------	---	----------------

30 CHLORANTHACEAE

CHLORANTHUS $x = 15$

<i>glaber</i> Chloranth	30	M. & S. 1935	BHM	Ind., Mal., China
<i>serratus</i>	30	" "	HM	Japan
<i>japonicus</i>	30	" "	M	China, Jap.
<i>spicatus</i>	30	Sugiura 1936a	M	Japan

Group III

RHOEADALES

32, 33

H

CAPPARIDALES

36-38

HST

VIOLALES

40, 41

HS

LOASALES

34, 35

H

CRUCIALES

39

H

POLYGALALES

42-44

HST



Chelidonium majus

32 PAPAVERACEAE

CHELIDONIUM $x = 5, 6$

<i>majus</i>	Greater Celandine				
	races: Japan	10	Nagao & M. 1943	HM	Eur., Asia M.
	U.S.A.	12	Bowden 1940a		
	Hungary	12	Felföldy 1947a		
	England	12	Nagao & M. 1943		

DICRANOSTIGMA (CHELIDONIUM) $x = 6, 8$

<i>franchetiana</i>		{ 12? Sugiura 1940		M	China
		16 Smith, T. 1937			

GLAUCIUM $x = 6$

<i>corniculatum</i>	Horned P.	12	Sugiura 1936b	H	Eur., Med.
<i>flavum</i> (<i>seuperi</i>)		12	" "	H	" "

HYLOMECON (STYLOPHORUM) $x = 6$

<i>japonicum</i>		12	Sugiura 1937b	H	Japan
------------------	--	----	---------------	---	-------

PLATYSTEMON $x = 6$

<i>californicum</i>		12	Sugiura 1937b	H	W: N. Amer.
---------------------	--	----	---------------	---	-------------

ESCHSCHOLTZIA $x = 6, 7$

<i>caespitosa</i>		12	Smith, T. 1937	H	California
<i>californica</i>	Calif. Poppy	12	Lawrence 1930	H	W: N. Amer.
<i>parishii</i>		12	Lewis & S. 1951	—	California
<i>pulchella</i>		12	Sugiura 1940	H	"
<i>minutiflora</i>		36	Lewis & S. 1951	—	"
<i>glyptosperma</i>		14	" "	—	"

ROEMERIA $x = 6, 7, 9, 11$

<i>violacea</i>		12	Sugiura 1937b	H	Eur., N. Afr.
<i>rhodifolia</i>		14	" "	—	Persia
<i>refracta</i>		{ 14 " 1940		H	Asia Minor
		18 " 1937b			
<i>speciosa</i>		18	" "	H	"
<i>hybrida</i>		22	" 1940	H	S. Europe

HYPECOUM $x = 6, 8?$

<i>procumbens</i>		{ 12 Smith, T. 1937		H	Medit., Arabia
		16? Sugiura 1937b			

PAPAVER* $x = 6, 7, 11$

$x = 6 (7)$

<i>apulum</i>		12	Sugiura 1936a	H	Italy
<i>causicum</i>		12	" 1937b	H	Caucasus
<i>pavoninum</i>	Peacock P.	12	" 1936a	H	Afgh., Turkest.
<i>atlanticum</i> (<i>rupifragum</i>)		12, 14	" 1940	H	Morocco
<i>argemone</i>		{ 12 Beale, M. 1939		H	Eur., N. Afr.
		42 Sugiura 1940			

$x = 7$

<i>alpinum</i> (<i>burseri</i>)	Alpine P.	14	Fabergé 1944	H	Alps, Arctic
<i>bracteatum</i>	Gr. Scarlet P.	14	Yasui 1936a	H	Med., Pers.
<i>commutatum</i>		14	Philp 1933b	—	Eur., Med.
<i>glaucum</i>	Tulip P. & 12 spp.	14	Sugiura 1931, 1937b, 1940, 1944	H	Syria

PAPAVER (cont.)

<i>lateritium</i>		14	Yasui 1941	H	Armenia
<i>rhoeas</i>	Field Poppy	14	Lawrence 1930	HMSp	Eur., Cauc.
<i>rupifragum</i>		14	Snoad 1952	H	Spain
<i>nudicaule</i>	Iceland P.	{ 14 28	Fabergé 1944 Horn 1938	HMSp	Alps, Arctic
<i>radicatum</i>		{ 14 42, 56, 70 70	Sugiura 1940 Fabergé 1944 Horn 1938, L & L '48	H	Arctic, Scand.
<i>macounii</i>		28	" "	—	N. Amer.
<i>pinnatifidum</i>		28	Sugiura 1940	H	Italy, Sard.
<i>triniaeifolium</i>		28	" "	H	Asia Minor
<i>dubium</i>		{ 28 42	Ljungdahl 1922 L. & L. 1944b	H	Europe
<i>orientale</i>	Oriental Poppy	{ 28 42	Snoad 1952 R. Yamazaki 1936	HMOsP	Persia, Asia M.
<i>pygmaeum</i>		42	Fabergé 1944	—	N. America
<i>laestadianum</i>		56	Horn 1938	—	Arctic, Scand.
<i>lapponicum</i>		56	" "	—	" "
<i>dahlianum</i>		70	" "	—	" "
<i>relictum</i>		70	" "	—	Alps, Arctic
<i>x = 11</i>					
<i>somniferum</i>	Opium P.	22 (44)	Furusato 1940	HMO	Balk., Pers.
<i>setigerum</i>		{ 22 44	Sugiura 1940 Kuzmina 1935	HMO	" "
ARGEMONE	<i>x = 7</i>				
<i>barclayana</i>		28	Sugiura 1940	—	Mexico
<i>grandiflora</i>	Prickly Poppy	56	" "	H	S.W. Mexico
<i>mexicana</i>	Mexican P.	28	" 1936b	HMO	Mexico
DENDROMECON	<i>x = 7</i>				
<i>rhannoides</i>		56	Lenz 1950	—	California
HUNNEMANNIA	<i>x = 7</i>				
<i>fumariaefolia</i>	Tulip P.	56	Sugiura 1936b	H	Mexico
MECONOPSIS	<i>x = 7, 11</i>				
<i>cambrica</i>	Welsh Poppy	{ 22 28?	Maude 1940 Sugiura 1940	H	W. Europe
<i>nepalensis</i>	Satin P.	28	" "	H	Himalayas
<i>robusta</i>		28	" 1944	H	"
PTERIDOPHYLLUM	<i>x = 9</i>				
<i>racemosum</i>		18	Sugiura 1936b	H	Japan
BOCCONIA (MACLEAYA)	<i>x = 10</i>				
<i>frutescens</i>		20	Sugiura 1937b	H	Mex., Peru
<i>microcarpa</i>		20	" "	H	China
MACLEAYA	<i>x = 10 (9?)</i>				
<i>cordata</i>	Plume Poppy	{ 18? 20 20	Negodi 1937 Sugiura 1937b Bowden 1945b	H	China, Japan

ROMNEYA $x = 19$
coulteri Matilija P. 38 Bilquez, D. 1951 H California

33 FUMARIACEAE

CORYDALIS $x = 6, 8 \quad x_2 = 14$

<i>cheilanthifolia</i>		12	Negodi 1940	H	China
<i>opiocarpa</i>		12	" "	H	Himalayas
<i>sibirica</i>		12	" "	H	Siberia, Himal.
<i>sempervirens</i>	Roman	12?	" "		
	Wormwood	16	Bowden 1945a	—	N. America
		16	Ownbey 1951a		
<i>aurea</i>		16	" "	H	"
<i>cava</i>		16	Lawrence 1930	—	Europe
<i>fabacea</i>		16	Hagerup, L. & L. '48	—	"
<i>intermedia</i>		16	Ryberg 1950	—	"
<i>micrantha</i>		16	Ownbey 1951a	H	E: N. Amer.
<i>pumila</i>		16	Ryberg 1950	—	Europe
<i>laxa</i>		16, 24	" "	—	"
<i>solida</i>	Fume Wort	16, 32	" "	R	"
(<i>bulbosa</i>)		24	Maude 1940	—	"
<i>claviculata</i>		32	Reese 1952a	—	"
<i>vesicaria</i> (<i>Cisticapnos</i>)		28	Negodi 1940	H	S. Africa
<i>lutea</i>	Yellow Fumitory	28	" "	H	Europe
		56?	Kellet, T. 1937		

FUMARIA $x = 7, 8?$

<i>rostellata</i>		14	Negodi 1951	—	Medit.
<i>micrantha</i>		28	" 1936a	H	W. Eur., Med.— Pers.
<i>muralis</i>		28	" 1951	—	N. & W. Europe
<i>parviflora</i>		28	" 1936a	H	Temp.
<i>spicata</i>		28	" 1951	—	W. Medit.
<i>agraria</i>		56	" 1936a	H	Medit.
<i>capreolata</i>		56	" "	H	Med., C. & W. Eur.
<i>flabellata</i>		56	" 1951	—	S. Italy, Algeria
<i>major</i>		56	" "	—	W. Europe
<i>officinalis</i>	Fumitory	14	Sugiura 1937b		
		28	Negodi 1951	HM	Europe, Persia
		32	Vaarama 1949		

DICENTRA $x = 8$

<i>eximia</i>		16	Bowden 1945a	H	E: N. Amer.
<i>pusilla</i>		16	Sakai 1934	H	Japan
<i>spectabilis</i>	Bleeding Heart	16	Negodi 1940	H	E. Asia
<i>formosa</i>		24	Kellet, T. 1937	H	W: N. Amer.

ADLUMIA $x = (8) 16$

<i>cirrrosa</i>	Allegheny Vine	32	Negodi 1940	H	N. America
-----------------	----------------	----	-------------	---	------------

35 LOASACEAE

CAIOPHORA (LOASA) $x = 8$

<i>lateritia</i>	Ch. Nettle	16	Hamel 1938	H	Chile
as <i>L. aurantiaca</i>		24?	Sugiura 1936a		

MENTZELIA (BARTONIA) $x = 9, 11, 13$					
<i>humilis</i>	18	Hamel 1938	—		N. America
<i>albescens</i>	22	Covas & S. 1946	H		Mex.—Argentine
<i>decapetala</i>	22	Hamel 1938	H		S. U.S.A.
<i>lindleyi</i>	{ 26	" "	H		California
	36	Sugiura 1936a	H		
BLUMENBACHIA (LOASA) $x = 12$					
<i>hieronymi</i> Sting Lily	24	Hamel 1938	H		Argentine
<i>insignis</i>	24	" "	H		S. America
LOASA $x = 14, 15?$					
<i>triphylla</i>	28	Hamel 1938	H		Peru
<i>vulcanica</i>	28	Sugiura 1937b	H		Ecuador
<i>ferruginea</i>	{ 28	Hamel 1938	—		Peru
	30	Sugiura 1940	—		
<i>urens (hispidula)</i>	30	" 1936a	—		"
<i>crinus</i>	40	" 1940	—		S. America
GRONOVIA $x = ?$					
<i>scandens</i>	67	Hamel 1938	—		S. America

36 CAPPARIDACEAE

ATAMISQUEA $x = 8$					
<i>emarginata</i>	16	Covas & S. 1946	—		Chile, Arg.
CAPPARIS $x = 9, 10, x_2 = 19$					
<i>cynophallophora</i>	18	Kuhn 1928b	—		S. America
<i>saligna</i>	30	" "	—		
<i>rothii</i>	40	Hagerup 1932	V		Trop. Afr.
<i>sepiaria</i> Indian Capers	40	Raghavan 1938	V		India
<i>zeylanica</i>	40	Raghavan & V. 1941a	V		"
<i>spinosa</i> Caper Bush	38	Taylor 1925c	HV		Med.
<i>acutifolia</i>	c. 84	Kuhn 1928b	—		China
CLEOME $x = 9, 10, 11, \text{etc.}$					
<i>violacea</i>	18	Sugiura 1944	—		N. America
<i>viscosa</i>	20	Janaki Ammal 1933	M		O.W. Tropics
<i>spinosa</i> Spider Fl.	{ 20	Ufer 1937	H		S. America
	24	Sugiura 1936a, b			
<i>as gigantea</i>	{ 20	Lewitsky 1931a			"
	70, 140	Ufer 1927			
<i>graveolens</i>	22	Sugiura 1936a, b	—		N. America
<i>monophylla</i>	22	" "	—		India, Trop. Afr.
<i>candelabrum</i>	32	" 1936	H		—
<i>lutea</i>	32	Rollins 1939b	H		N. America
<i>serrulata</i>	32	" "	H		"
<i>paradoxa</i>	32	T. 1922	—		Abyssinia
<i>chelonii</i>	34	Raghavan & V. 1941a	—		India, Java
MAERUA $x = 10$					
<i>arenaria</i> Earth-Sugar Plant	20	Raghavan & V. 1941a	M		India

POLANISIA (CLEOME) $x = 10$				
<i>trachysperma</i>	20	Raghavan 1938	H	N. America
CRATAEVA $x = 13$				
<i>adansoni</i>	26	Raghavan & V. 1939a	W	Trop. Afr.
<i>religiosa</i> Sacred Barna	26	„ „	HMSp	Tropics
GYNANDROPSIS $x = ?$				
<i>pentaphylla</i> Cat's Whiskers	30	Sugiura 1937b		
	32	V. S. Rao 1936b	HOV	Trop. Afr., Asia
	34	Raghavan 1938		
DACTYLAENA $x = 16$				
<i>micrantha</i>	32	Sugiura 1936a, b	—	Brazil
ISOMERIS $x = 17 ?$				
<i>arborea</i>	34?	Billings 1937	H	California

37 MORINGACEAE

MORINGA $x = 7$				
<i>pterygosperma (oleifera)</i>				
Drumstick Tree	28	Patel & N. 1937	VO	N.W. India

39 CRUCIFERAE

Order of the Tribes with their Basic Numbers

I Lepidieae: 4-12	X Hesperideae: 7, 8, 10, 12, 13
II Stenopetaleae: 5	XI Brassiceae: 7-12
III Drabeae: 5-9	XII Schizopetaleae: 9
IV Sisymbrieae: 5-11	XIII Heliophileae: 10, 11
V Matthioleae: 6, 7, 8	XIV Cremolobeae: 11
VI Alyseae: 6, 7, 8	XV Pringleae: 12
VII Arabideae: 6, 7, 8, 11, 15	XVI Stanleyae: 12
VIII Lunarieae: 7	XVII Streptanthae: 12
IX Euclidieae: 7, 12	

TRIBE I: LEPIDIEAE

PHYSARIA $x = 4$				
<i>geyeri</i>	8	Jakowska 1949	H	N.W: U.S.A.
<i>vitulifera</i>	16	Weber & B. 1950	—	„
HORNUNGIA (HUTCHINSIA) $x = 6$				
<i>petraea</i>	12	Jaretsky 1929	H	Eur., Asia M., N. Africa
HUTCHINSIA $x = 6$				
<i>procumbens</i>	12, 24	Manton 1932	H	N. Temp.
AETHIONEMA * $x = 6$				
<i>coridifolium</i> & 4 spp.	24	Manton 1932	H	Asia M., Lebanon
<i>persicum</i>	36	„ „	H	S.W. Asia
<i>thomasianum</i>	36	„ „	H	Aosta

AETHIONEMA (cont.)

<i>grandiflorum</i> & 5 spp	48	Manton 1932	H	Lebanon
<i>ovalifolium</i>	48	Jaretsky 1932	H	S. Eur., S.W. Asia
<i>cordatum</i>	60	Manton 1932	H	Lebanon

COCHLEARIA $x=6, 7, x_2=19$

<i>officinalis</i> Scurvy Grass	24+0-4B	L. & L. 1948	MSPVit	N. & Arctic Eur.
<i>micacea</i> Scottish S.G.	34-36	Crane & G. 1923	—	Mts., Br. Is., Norway
<i>polonica</i>	36	Skalinska 1950a	—	E. Europe
<i>anglica</i>	{ 48+2B 37-50	L. & L. 1948 Crane & G. 1923	MSP	N.W. Europe
<i>arctica</i>	14	L. & L. 1948	—	North Reg.
<i>oblongifolia</i>	14	M. & S. 1935	V	"
<i>scotica</i> (groenlandica)	14	Maude 1939	Sp	Brit. Isles
<i>alpina</i> Mtn. Scurvy Grass	28	Crane & G., 1923	Sp	North Reg.
<i>danica</i> Danish S.G.	42	" "	V	"
<i>tatrae</i>	42	Skalinska 1950a	—	E. Europe
<i>glastifolia</i>	38	Manton 1932	—	N.W. Europe

BISCUTELLA* $x=6, 8, 9$

<i>microcarpa</i> (didyma)	12	Manton 1937	—	S. Spain
<i>apula</i> & 4 spp.	16	" "	—	" Algeria
<i>arvernensis</i>	18	" "	—	Medit.
<i>laevigata</i> 18, 27, 36, 45.	54	" "	H	C. & S. Europe
species	81	" "	—	Spain

COLUTEOCARPUS $x=7$

<i>reticulatus</i>	14	Manton 1932	—	Asia Minor
--------------------	----	-------------	---	------------

PETROCALLIS $x=7$

<i>pyrenaica</i>	14	Favarger 1953	—	S. Eur. Mtns.
------------------	----	---------------	---	---------------

EUNOMIA $x=7$

<i>oppositifolia</i> Stone Cress	14	Manton 1932	H	Greece
<i>iberidea</i>	28	" "	H	S.W. Asia

ISATIS $x=7$

<i>tinctoria</i> Woad	28	Manton 1932	D	C. & S. Europe
-----------------------	----	-------------	---	----------------

THLASPI* $x=7$

<i>arvense</i> Penny Cress & 11 spp.	14	Manton 1932	—	Eur., N. Asia, N. Africa
<i>cilicicum</i>	14, 28	" "	—	Asia Minor
<i>montanum</i>	c. 28	" "	—	Europe
<i>perfoliatum</i>	c. 70	Jaretsky 1932	—	Eur., N. Africa, Nr. East

IBERIS* $x=7, 8, 11$

<i>gibraltarica</i> & 5 spp.	14	Manton 1932	H	Spain, Mor.
<i>amara</i> Wild Candytuft	14, 16	Jaretsky 1932	H	W. & S. Eur., N. Africa
<i>umbellata</i> Candytuft	{ 14 16	Manton 1932 P. T. Thomas 1945*	H	S. Europe
<i>jordani</i> & 2 spp.	22	Manton 1932	H	Anatolia
<i>saxatilis</i>	22+2B	" "	H	S.W. Europe
<i>semperflorens</i>	22+0-1B, 44	" "	H	Italy, Sicily
<i>sempervirens</i>	22, 44	Simonet 1932c	H	S. Eur., Asia M.

IBERIS (cont.)

<i>correaefolia</i>	44	Manton 1932	H	S. Europe
<i>corifolia</i>	c. 50	„ „	H	Spain

CAPSELLA $x = 8$

<i>bursa-pastoris</i> Shepherd's Purse	32	Vaarama 1943	—	Cosmop.
--	----	--------------	---	---------

LEPIDIUM* $x = 8$

<i>armoracium</i> & 5 spp.	16	Manton 1932	V	Abyssinia
<i>campestre</i> Pepperwort	16	Wulff 1939b	—	Eur., As. M., Cauc.
<i>sativum</i> Common Cress	{ 16	Reese 1950	OV	S.W. Asia
	32	Vaarama 1951		
<i>vesicarium</i>	16, 32	Manton 1932	—	Cauc., Persia
<i>latifolium</i> (3x) Dittander	24	Heiser & W. 1948	V	Eur., N. Africa, S.W. Asia
<i>densiflorum</i> Pepperweed & 3 spp.	32	Manton 1932	—	N. America
<i>apetalum</i>	32	F. H. Smith 1938	—	„
<i>cartilagineum</i> (5x)	40	Manton 1932	—	Siberia

CARDARIA (LEPIDIUM) $x = 8$

<i>draba</i> Hairy Cress	64	Manton 1932	SpV	E. Med., W. Asia
--------------------------	----	-------------	-----	------------------

CORONOPUS $x = 8$

<i>didymus</i> Lesser Swine Cress	32	Manton 1932	H	S. America
<i>squamatus</i> (<i>procumbens</i>) Wart Cress	32	„ „	--	Eur., Med., Canaries

BIVONAEA $x = 8$

<i>saviana</i>	32	Corti 1930b	—	Italy
----------------	----	-------------	---	-------

TEESDALIA $x = 9$

<i>nudicaulis</i>	36	Manton 1932	—	Eur., N. Africa
-------------------	----	-------------	---	-----------------

IONOPSIDIUM $x = 11, 12$

<i>prolongoi</i>	22	Chiarugi 1945	—	Spain
<i>acaule</i> Diamond Fl.	24	Corti 1930b	H	Portugal

TRIBE II: STENOPETALEAE
STENOPETALUM $x = 5$

<i>lineare</i>	10	Manton 1932	—	Australia
<i>sphaerocarpum</i>	10	„ „	—	„

TRIBE III: DRABEAE
LESQUERELLA $x = 5, 6, 8, 9$

<i>alpina</i>	10	Rollins 1939a	—	W: N. America
<i>argentea</i> Bladder Pod	10	Manton 1932	H	C: U.S.A.
<i>montana</i>	10	Rollins 1939a	—	W: N. Amer.
<i>ludoviciana</i>	10, 30	„ „	—	„
<i>calcicola</i>	c. 20	„ „	—	„
<i>mendocina</i>	c. 50	Manton 1932	—	Chile
<i>arctica</i>	60	Bøcher & L. 1950	—	N. & Arctic Amer.
<i>fendleri</i>	12	Rollins 1939a	—	N. Mexico

LESQUERELLA (cont.)

<i>gracilis</i>	12	Manton 1932	—	W: N. Amer.
<i>intermedia</i>	16	Rollins 1939a	—	"
<i>grandiflora</i>	18	Manton 1932	—	Texas

EROPHILA (DRABA) $x = 7$

<i>verna</i>	Whitlow Grass	14, 24, 30, 32, 34, 36, 40, 52, 58, 64	} Winge 1940	H	Eur., Asia, N. Afr.
--------------	---------------	--	--------------	---	---------------------

RHIZOBOTRYA $x = 7$

<i>alpina</i>	14	Chiarugi 1933	—	S. Tyrol
---------------	----	---------------	---	----------

DRABA* $x = 8$

<i>fladnizensis</i>	16	L. & L. 1948	—	N. & Arctic
<i>incana</i>	32	Heilborn 1927	—	"
<i>muralis</i>	c. 32	Reese 1952a	—	Eur., W. Asia, N.W. Africa
<i>crassifolia</i> (5x)	40	Heilborn 1941	—	N. America
<i>rupestris</i> & 2 spp.	48	" "	—	N. & Arctic
<i>aurea</i>	64	Bøcher 1938a	—	"
<i>dahurica</i> (<i>hirta</i>) & 2 spp.	64	Heilborn 1941	—	Arctic
<i>sachalinensis</i>	64	R. Yamazaki 1936	—	"
<i>magellanica</i>	48, 64, 80	Heilborn 1927	—	Magellan
<i>arctica</i>	80	Flovik 1940	—	Arctic
<i>alpina</i>	{ 80	Heilborn 1941	—	N. & Arctic
	{ 112	L. & L. 1948	—	
<i>arabisans</i>	96	F. H. Smith 1938	H	E: N. Amer.

KERNERA $x = 8$

<i>saxatilis</i>	16	Chiarugi 1933	H	Europe
------------------	----	---------------	---	--------

SCHIVERECKIA $x = 8$

<i>doerfleri</i> (<i>bornmuelleri</i>)	16	Manton 1932	—	S.E. Eur., Asia M.
<i>podolica</i>	16	" "	—	E. Europe

ARMORACIA $x = 8$

<i>rusticana</i> (<i>lapathifolia</i>)	Horse Radish	32	Manton 1932	SpVit	S.E. Eur., W. Asia
--	--------------	----	-------------	-------	--------------------

LITHODRABA (XERODRABA) $x = 8$

<i>mendocinensis</i>	64	Boelcke 1951	—	Argentina
----------------------	----	--------------	---	-----------

TRIBE IV: SISYMBRIEAE

ARABIDOPSIS $x = 5?$

<i>thaliana</i>	Common Wall Cress	10	Jaretsky 1928a	—	Eur., Temp. Asia, N. Africa
<i>suecica</i>		c. 28	Manton 1932	—	N. Europe
<i>pumila</i>		32	" "	—	S.W. Asia

DESCURAINIA $x = 7$

<i>pinnata</i>		14, 28, 42	Baldwin & C. 1940	—	E: N. Amer.
<i>richardsonii</i> (<i>canescens</i>)		14, 28, 42	" "	—	Rocky Mts.
<i>obtus</i>		14, 42	" "	—	S: U.S.A., Mex.
<i>sophia</i>	Flixweed	{ 20	Bacz-Major 1934	—	Temp. O.W.
		{ 28, 56	Manton 1932	—	

EUTREMA $x = 7$

<i>wasabi</i>	28	Sugiura 1936b	—	E. Sib., Japan
<i>edwardsii</i>	28	Bøcher & L. 1950	—	Arctic, Urals
	42	S. & S. 1941	—	

SISYMBRIUM $x = 7, 8$

<i>altissimum</i>	Tall Rocket	14	F. H. Smith 1938	—	E. Eur., Nr. East
<i>corniculatum</i>		14	Baez-Major 1934	V	Spain
<i>loeselii</i>		14	Jaretsky 1932	—	S.E. Eur., W. Asia
<i>officinale</i>	Hedge Mustard	14	Wulff 1937b	V	Eur., N. Africa,
		14+4B	Baez-Major 1934	—	Near East
<i>irio</i>	London Rocket	14	Jaretsky 1932	—	Medit.
		16	Baez-Major 1932	—	
<i>supinum</i>		42	" "	—	Eur., Medit.
<i>hirsutum</i>		56	" "	V?	Turkestan
<i>dentatum</i>		16	Favarger 1949b	—	Europe

CAMELINA $x = 7, 20$

<i>sativa</i>	Gold of Pleasure	28	Baez-Major 1934	—	E. Eur., W. Asia
		40	Ibarra & P. 1947a	OT	
		42	Jaretsky 1928a	—	
<i>microcarpa</i>		40	Manton 1932	—	C. & S. Europe,
				—	W. Asia
<i>parodii</i>		40	Ibarra & P. 1947a	—	Argentina
<i>alyssum</i>		40	Manton 1932	—	S. & C. Europe
		42	Jaretsky 1928a	—	

BRAYA $x = 8$

<i>alpina</i>		32	Manton 1932	—	Alps, Arctic, Tibet
<i>linearis</i>		42	Bøcher & L. 1950	—	Scand., Greenland
		64	L. & L. 1948	—	
<i>purpurascens</i>		64	" "	—	Alps, Arctic
<i>humilis</i>		40, 56, 64	Rollins 1953	—	Alaska—Colo.

ONURIS $x = 9$

<i>graminifolia</i>		18	Manton 1932	—	Chile
---------------------	--	----	-------------	---	-------

ALLIARIA $x = 9?$

<i>petiolata (officinalis)</i>	Garlic Wort	36	Baez-Major 1934	V	Eur., N. Africa, Cauc.—Himal.
--------------------------------	-------------	----	-----------------	---	-------------------------------

XERODRABA $x = 11$

<i>pycnophylloides</i>		22	Manton 1932	—	Patagonia
------------------------	--	----	-------------	---	-----------

TRIBE V: MATTHIOLEAE

MATTHIOLA $x = 6, 7$

<i>odoratissima</i>		12	Manton 1932	H	S. Cauc.
<i>tatarica</i>		12	" "	—	E. Eur., Asia M.
<i>thessala</i>		12	Jaretsky 1929	—	Medit.
<i>tristis</i>		12	" "	H	"
<i>vallesiaca</i>		12	Manton 1932	H	Italy, Greece
<i>bicornis</i>	Evening Stock	14	" "	H	Greece, Asia M.
<i>fenestralis</i>		14	" "	H	Crete
<i>parviflora</i>		14	" "	—	Medit.
<i>sinuata</i>	Sea Stock	14	" "	—	W. Eur. & Medit.

MATTHIOLA (<i>cont.</i>)					
<i>tricuspidata</i>	14	Jaretsky, T. 1937	H	Medit.	
<i>incana</i>	Brompton Stock, 14	Straub 1937	H	"	
	Gilliflower 14+1B	Frost 1931			
CHORISPORA $x = 7$					
<i>tenella</i>	14	Manton 1932	H	Cauc., N. China	
AUBRIETIA $x = 8$					
<i>columnae</i>	16	Jaretsky 1928a	H	Italy	
<i>deltoidea</i>	16	Sakai 1935	H	Balkans, Asia M.	
<i>edentula</i>	16	Jaretsky 1928a	—	Kurdistan	
<i>libanotica</i>	16	" "	H	Lebanon	

TRIBE VI: ALYSSEAE

FARSETIA $x = 6, 7, 8$					
<i>ramosissima</i>	12	Hagerup 1932	—	Trop. Africa	
<i>erlocarpa</i>	14, 16	Manton 1932	—	Asia M., Syria	
<i>clypeata</i>	16	" "	—	S. Eur., Asia M.	
ALYSSUM* $x = 8$					
<i>corymbosum</i>	16	Jaretsky 1928a	H	Balkans	
<i>saxatile</i> Golden A. & 13 spp.	16	Manton 1932	H	C. Europe	
<i>alyssoides (calycinum)</i> Small Alison	32	" "	—	Eur., W. Asia	
<i>pyrenaicum</i>	32	" "	H	Pyrenees	
<i>repens</i>	32	" "	H	Eur., Asia M.	
<i>wulfenianum</i> & 2 spp.	32	" "	H	Asia Minor	
LOBULARIA (ALYSSUM) $x = 8$					
<i>maritima</i> (3x) Sweet Alison	24	Manton 1932	H	Medit. <i>cult</i>	
BERTEROA $x = 8$					
<i>incana</i>	16	Wulff 1939b	H	Eur., W. Asia	
<i>mutabilis</i>	16	Manton 1932	—	" "	
CLYPEOLA $x = 8$					
<i>ionthlaspii</i>	32	Jaretsky 1928a	H	Medit., W. & C. Asia	
VESICARIA $x = 8$					
<i>graeca</i>	16	Manton 1932	H	S. Europe	
<i>utriculata</i>	16	" "	H	S. Eur., Asia M.	

TRIBE VII: ARABIDEAE

ARABIS $x = 6, 7, 8$					
<i>dentata</i>	12	F. H. Smith 1938	—	N. America	
<i>laevigata</i>	14	" "	—	"	
<i>lyrata</i>	16	" "	—	"	
<i>alpina</i> Rock Cress	16	Sakai 1935	H	Arctic & Alpine	
<i>coerulea</i>	16	Favarger 1953	—	Alps—Tatra	
<i>turrita</i>	16	Mattick, T. 1950	—	C. & S. Europe, Asia Minor	

ARABIS (cont.)

<i>iwatensis</i>	32	M. & S. 1935	—	Japan
<i>hirsuta</i>	32	Jaretsky 1928a	—	N. Temp.
<i>serrata</i>	40	Sakai 1935	H	Japan
<i>holboellii</i> (Apo.)	14, 21+0-1B, 28, 35, 42	Bøcher 1951, '54	—	North Region

CARDAMINE * $x = 7, 8, 15$

<i>asarifolia</i>	{ 14	Lawrence 1931	—	Europe
<i>amara</i> Bitter Cress & 7 spp.	{ 16	Manton 1932	—	
<i>bellidifolia</i>	16	" "	V	Eur., Asia M., Alt.
<i>parviflora</i>	16	L. & L. 1948	—	North & Arctic
	16	F. H. Smith 1938	—	Temp. Europe & America
<i>pratensis</i> Lady's Smock	{ 16, 30, 40 30-76 30-78	Guinochet 1946 Lövkvist 1947 Banach 1950	HV	N. Temp.
<i>californica</i>	32	Manton 1932	—	N. America
<i>pinnata</i> & 2 spp.	48	Schwarzenbach 1922	—	S. Eur. Mts.
<i>chenopodiifolia</i>	64	Manton 1932	—	S. America
<i>pennsylvanica</i>	64	F. H. Smith 1938	—	E: U.S.A.

BARBAREA * $x = 8$

<i>hondoensis</i> & 1 sp.	16	M. & S. 1935	—	Japan
<i>intermedia</i> & 2 spp.	16	Manton 1932	—	W. Eur. & Medit.
<i>verna</i> (praecox) Amer. Cress	16	Jaretsky 1932	OV	W. Medit.
<i>vulgaris</i> Winter Cress	16	Manton 1932	V	Eur., Asia, N. Afr.

CARDAMINOPSIS $x = 8$

<i>halleri</i>	16	Jaretsky 1928a	H	Eur. Mts.
<i>petraea</i>	16	L. & L. 1948	—	Arctic & Alpine

DENTARIA $x = 8$

<i>macrophylla</i>	16	Morinaga & F. 1931a	—	Sib., Him., W. Ch.
<i>glandulosa</i>	48	Banach-Pogan 1954	—	E. Eur., C. Asia
<i>integrifolia</i>	44-56	Crampton 1950	—	W. N. Amer.
<i>enneaphyllos</i>	80	Banach-Pogan 1954	—	E. Europe
<i>bulbifera</i> Coral-wort	96	" " "	—	Eur., Asia M., Cauc.

NASTURTIUM $x = 8$

<i>officinale</i> Green Water Cress	32	Howard & M. 1946	V	Eur., W. Asia, N. Africa
<i>microphyllum</i> (uniseriatum)	64	" "	—	Eur., W. Asia
off. \times micr. Brown W. Cress	48	" "	V	W. Europe, cult

RORIPPA $x = 8$

<i>austriaca</i>	16	Howard 1947	—	E. Eur., W. Asia
<i>pyrenaica</i>	16	Manton 1932	—	W. & S. Europe
<i>amphibia</i>	{ 16 32	Howard 1947 L. & L. 1942	—	Eur., Sib., N. Afr.
<i>islandica</i>	{ 16 32	Jaretsky 1932 Howard 1947	—	Cosmop.
<i>sylvestris</i>	48	" "	—	Eur., N. Africa

SISYMBRELLA $x = 8$

<i>aspera</i>	16	Manton 1932	—	S. Europe
<i>dentata</i>	32	" "	—	S. Italy, Balearics

TURRITIS	$x = 8$				
<i>glabra</i>	Tower Mustard	{ 16 32	Manton 1932 Jaretsky 1928a	—	Temp. O.W.
LEAVENWORTHIA	$x = 11, 15$				
<i>aurea</i>		22	Baldwin 1945	—	S.E. U.S.A.
<i>stylosa</i>		30	" "	—	"
<i>torulosa</i>		30	" "	—	"
<i>uniflora (michauxii)</i>		30	" "	—	E. U.S.A.

TRIBE VIII: LUNARIEAE

LUNARIA	$x = 7$				
<i>annua</i>	Honesty	28 + 2B	Manton 1932	H	S.E. Europe
<i>rediviva</i>		28 + 2B?	" "	—	S. Eur., W. Sib.
PELTARIA	$x = 7$				
<i>turkmena</i>		14	Manton 1932	—	C. Asia
<i>alliacea</i>	Shieldwort	28, 58	" "	HV	S.E. Europe
RICOTIA	$x = 7$				
<i>lunaria</i>		28	Manton 1932	H	Syria, Egypt
THYSANOCARPUS	$x = 7$				
<i>curvipes</i>		28	Manton 1932	—	W: N. America

TRIBE IX: EUCLIDIEAE

BUNIAS	$x = 7$				
<i>erucago</i>		14	Melinossi 1937	RV	Medit.
<i>orientalis</i>		{ 14 42	Resende 1937 Jaretsky 1928a	FoV	E. Eur., W. Asia
EUCLIDIUM	$x = 7$				
<i>syriacum</i>		14	Jaretsky 1932	—	E. Eur., W. Asia
<i>tenuissimum (tataricum)</i>		14	Manton 1932	—	C. Asia
MYAGRUM	$x = 7$				
<i>perfoliatum</i>		14	Jaretsky 1932	—	Medit., Nr. East
NESLIA (VOGELIA)	$x = 7$				
<i>paniculata</i>		14	Manton 1932	—	Nr. East
TAUSCHERIA	$x = 7$				
<i>lasiocarpa</i>		14	Manton 1932	—	C. Asia
HYMENOPHYSA	$x = 12$				
<i>pubescens</i>		24	Manton 1932	—	Siberia

TRIBE X: HESPERIDEAE

CHEIRANTHUS	$x = 7$				
<i>cheiri</i>	Wallflower	14	Sakai 1935	H	S. Europe
<i>cinereus</i>		28	Manton 1932	—	Canary Is.
<i>menziesii</i>		28	" "	H	W: N. Amer.

CHEIRANTHUS (cont.)

<i>tenuifolius</i>	28	Manton 1932	—	Madeira
<i>allionii</i> (Erysimum)				
Siberian W.	42	Jaretsky 1932	H	cult

ERYSIMUM $x = 7, 8$

<i>linifolium</i>	14	Manton 1932	H	Spain
<i>cheiranthoides</i> Treacle Mustard	16	" "	—	Eur., N. Amer., N. Asia
<i>cuspidatum</i>	16	" "	—	Greece—Persia
<i>perowskianum</i>	32–36	" "	H	Cauc., Afghan.
<i>purpureum</i>	c. 40	" "	H	Armenia, Syria
<i>helveticum</i>	48	Jaretsky 1928a	—	Eur., Alps
<i>rupestre</i>	c. 56	Manton 1932	—	Asia Minor
<i>canescens</i>	72	" "	—	S. Eur., Cauc.

GOLDBACHIA $x = 7$

<i>laevigata</i>	28	Manton 1932	H	Asia M., Persia— Himalayas
------------------	----	-------------	---	-------------------------------

MALCOLMIA $x = 7, 8, 10?$

<i>maritima</i> Virginian Stock	14	Jaretsky 1928a	H	S. Europe
	14–16	Manton 1932		
<i>africana</i>	14	Jaretsky 1928a	—	S. Eur., C. Asia
	28	Manton 1932		
<i>flexuosa</i>	16	Jaretsky 1932	—	Greece
<i>chia</i>	32	Manton 1932	H	Medit.
<i>littorea</i>	20	" "	H	W. Medit.

HESPERIS $x = 7, 12, 13$

<i>bicuspidata</i>	14	Manton 1932	—	Asia Minor
<i>steveniana</i>	14	" "	—	Greece, Asia M.
<i>runcinata</i>	24	" "	—	C. Europe
<i>matronalis</i> Dame's Violet	24	" "	H	Eur., W. & C. Asia
	28	Jaretsky 1928a		
<i>sylvestris</i>	26	Manton 1932	—	" "
<i>lutea</i>	28	" "	—	Japan

TRIBE XI: BRASSICEAE

CALEPINA $x = 7$

<i>irregularis</i> (corvini)	14	Manton 1932	—	Medit., Nr. East
	42	Jaretsky 1932		

CONRINGIA $x = 7$

<i>orientalis</i>	14	Jaretsky 1929	—	E. Medit.
-------------------	----	---------------	---	-----------

COSSONIA (RAFFENALDIA) $x = 7$

<i>africana</i>	14	Manton 1932	H	Algeria, Morocco
-----------------	----	-------------	---	------------------

HIRSCHFELDIA (SINAPIS) $x = 7$

<i>incana</i>	14	Heiser & W. 1948	—	Medit., Nr. East
---------------	----	------------------	---	------------------

MORISIA $x = 7$

<i>monantha</i> (hypogaea)	14	Manton 1932	H	Sard., Corsica
----------------------------	----	-------------	---	----------------

MORICANDIA $x = 7$					
<i>arvensis</i>	28	Manton 1932	H		W. Medit.
DIPLOTAXIS $x = 7, 9, 11$					
<i>erucoides</i> White Wall Rocket	14	Manton 1932	—		Medit.
	14	Jaretsky 1932	—		
<i>tenuifolia</i>	{ 20+2B	Baez-Major 1934	—		S. & C. Eur.
	22	Ibarra & P. 1947b	—		
<i>catholica</i>	18	Manton 1932	—		S. Eur., N. Africa
	18+2B	Baez-Major 1934	—		
<i>muralis</i> Wall Mustard	{ 22	Jaretsky 1932	—		S. & C. Europe
	42	Ibarra & P. 1947b	—		
	44	Lubbert 1951	—		
CARRICHTERA $x = 8$					
<i>annua</i>	16, 32	Manton 1932	—		Medit.—Persia
RAPISTRUM $x = 8$					
<i>hispanicum</i>	16	Ibarra & P. 1948	—		Medit.
<i>rugosum</i>	16	Baez-Major 1934	—		"
REBOUDIA $x = 8$					
<i>erucarioides</i>	16	Manton 1932	—		Algeria, Morocco
SUCCOWIA $x = 8, 9$					
<i>balearica</i>	{ 32	Jaretsky 1929	—		W. Medit.
	36	Manton 1932	—		
ERUCASTRUM $x = 8, 15$					
<i>obtusangulum</i>	16	Coutinho & L. 1948	—		Europe
<i>abyssinicum</i>	32	Manton 1932	—		Abyssinia
<i>nasturtiifolium</i>	32	" "	—		S.W. & C. Eur.
<i>elatum</i>	30	" "	—		Morocco
<i>gallicum</i>	30	" "	—		W. & C. Europe
BRASSICA $x = 8, 9, 10, 11$. $x_s = 17, 18, 19$					
$x = 8$					
<i>nigra</i> (<i>Sinapis</i>) Black Mustard	16	Nagai & S. 1930	SpO		<i>cult</i>
$x = 9$					
<i>alboglabra</i>	18	Karpechenko 1924a	V		S.W. Asia
<i>balearica</i>	18	Manton 1932	V		Balearics
<i>insularis</i>	18	" "	—		Sardinia
<i>rupestris</i>	18	" "	—		Sicily
<i>sylvestris</i> (<i>oleracea</i>)	18	Griesinger 1937	V		<i>cult</i>
<i>oleracea</i> Kale (2x),	18 (36)	Howard 1939	V		<i>cult</i>
Cabbage, etc.	18	Karpechenko 1924a	V		
	(36)	Pirschle 1942			
	(36, 72)	Schtschavinskaja 1937a			
$x = 10$					
<i>chinensis</i> Shantung C.	20	Richharia 1937b	V		E. Asia
<i>japonica</i> Curled M.	20	Shimotomai 1925	V		Japan
<i>narinosa</i>	20	Nagai & S. 1930	V		China
<i>pamirica</i> (<i>campestris</i>)	20	Karpechenko 1924a	O		Afghanistan
<i>pekinensis</i> Pet-sai	20	Richharia 1937b	V		China
<i>tournefortii</i>	20	Sikka 1940	V?		Medit., S.W. Asia,
					India
<i>trilocularis</i>	20	Alam 1936	—		Himalayas

BRASSICA (cont.)

<i>campestris</i>	Rape (2x)	20	Karpechenko 1924a	OV	<i>cult</i>
v. <i>toria</i>		20, (30)	Ramanujam 1940		
<i>rapa</i>	Turnip	20	Morinaga 1929	R	<i>cult</i>
		(40)	Schlösser 1936		
<i>x</i> = 11					
<i>elongata</i>		22	Manton 1932	V	S.E. Eur., Nr. East
<i>x</i> ₁ = (8 + 9), (8 + 10), (9 + 10).			<i>x</i> ₃ = (8 + 9 + 10)		
<i>carinata</i>	Abyssinian C.	34	Karpechenko 1930	V	Abyssinia
<i>juncea</i>	Rai, Indian M.	36	Alam 1936	OSp	S. Asia
<i>campestris</i> × <i>nigra</i>		18, (36)	Ramanujam & S. '43	—	<i>expt.</i>
<i>napus</i>	Rape (4x)	38	Nagai & S. 1930	OV	<i>cult</i>
<i>napobrassica</i>	Swede,	38	Howard 1938	R	<i>cult</i>
	Rutabaga	38, (57, 76)	Morinaga & K. '37		
<i>rugosa</i>	Chinese M.	38	Sikka 1940	SpV	E. Asia
<i>rapo-oleracea</i>	Kale (4x)	38	Crane & T. 1942	V	<i>cult</i>
<i>chinensis-carinata</i>		(54)	Howard 1942	V	<i>expt.</i>
<i>napo-campestris</i>		(56, 58?)	Frandsen & W. 1932	V	<i>expt.</i>

RAPHANO-BRASSICA *x* = 9

<i>sativus-oleraceus</i>		(18, 36)	Karpechenko 1927	V	<i>expt.</i>
--------------------------	--	----------	------------------	---	--------------

RAPHANUS *x* = 9

<i>caudatus</i>	Rat-tailed Radish	18	Manton 1932	V	<i>cult</i>
<i>landra</i>	Landra	18	" "	V	Italy
<i>maritimus</i>	Sea Radish	18	" "	V	W. Eur., Medit.
<i>raphanistroides</i>	Jap. R.	18	Sisa 1929	V	Korea
<i>raphanistrum</i>	White Charlock	18	Karpechenko 1928	Sp	Cosmop.
<i>sativus</i>	Radish	18	" 1924a	V	<i>cult</i>
		(36)	Simonet 1938		

CAKILE *x* = 9

<i>maritima</i>	Sea Rocket	18	Wulff 1937b	V	Eur., N. Africa, S.W. Asia
<i>edentula</i>		{ 18	Kruckeberg 1948	—	N. Amer., Iceland
		36	L. & L. 1947		

SINAPIS *x* = 9, 12

<i>arvensis</i>	Charlock	18	Sikka 1940	—	Eur., N. Africa, S.W. Asia
<i>alba</i>	White Mustard	24	Karpechenko 1924a	MaOSp	Europe—India

ERUCA *x* = 11

<i>cappadocica</i>		22	Manton 1932	—	Asia Minor
<i>orthosepala</i>		22	Jaretsky 1932	—	Spain
<i>sativa</i>	Rocket Salad	22	U <i>et al.</i> 1937	OV	Medit., W. Asia

ORYCHOPHRAGMUS *x* = 12

<i>violaceus</i>		24	Manton 1932	—	Temp. E. Asia
------------------	--	----	-------------	---	---------------

RHYNCHOSINAPIS *x* = 12

<i>monensis</i>	Isle-of-Man C.	24	Sikka 1940	V	W: Br. Isles
<i>wrightii</i>	Lundy Cabbage	24	" "	V	Lundy Is.
<i>erucastrum</i> (<i>Brassica</i>					
<i>chelranthos</i>)		48	Wright 1936	—	S. & C. Europe

CRAMBE $x = 15$

<i>filiformis</i>	30	Manton 1932	—	S. Spain, N.W. Afr.
<i>fruticosa</i>	30, 60	" "	—	Madeira
<i>maritima</i> Sea Kale	{ 30 60	L. & L. 1948 Litardière & D. 1942	V	W. Eur., Black Sea
<i>orientalis</i>				Asia M., Persia
<i>v. koktebelica</i>	30	Manton 1932	VSp	
<i>v. juncea</i>	c. 120	" "		
<i>hispanica</i> Spanish Colewort	60	" "	HV	Morocco—S. Per.
<i>tatarica</i> Tartar Bread Pl.	60, 120	" "	RV	E. Eur., N. Asia
<i>abyssinica</i>	90	" "	—	Abyssinia
<i>cordifolia</i> Colewort	c. 120	" "	HV	Persia, Cauc.
<i>grandifolia</i>	c. 120	" "	V?	Asia M., Cauc.

TRIBE XII: SCHIZOPETALEAE

SCHIZOPETALON $x = 9$

<i>walkeri</i>	18	Manton 1932	H	Chile
----------------	----	-------------	---	-------

TRIBE XIII: HELIOPHILEAE

HELIOPHILA $x = 10, 11$

<i>linearifolia</i>	20	Manton 1932	—	S. Africa
<i>integrifolia (pilosa)</i>	20	" "	H	"
<i>amplexicaulis</i>	20-22	" "	—	"
<i>crithmifolia</i>	{ 20 22	" " Jaretsky 1932	—	"

TRIBE XIV: CREMOLOBEAE

MENONVILLEA $x = 11$

<i>gayi</i>	22	Manton 1932	—	Chile
-------------	----	-------------	---	-------

TRIBE XV: PRINGLEEAE

PRINGLEA $x = 12$

<i>antiscorbutica</i> Kerg. Cabbage	24	Hamel 1951a	VVit	Kerguelen Is.
-------------------------------------	----	-------------	------	---------------

TRIBE XVI: STANLEYEAE

STANLEYA* $x = 12$

<i>pinната & 2 spp.</i>	24	Rollins 1939b	—	W: N. Amer.
<i>v. integrifolia</i>	24, 48	" "		"

TRIBE XVII: STREPTANTHEAE

CAULANTHUS $x = 12$

<i>crassicaulis</i>	24	Rollins 1939b	—	W: N. Amer.
---------------------	----	---------------	---	-------------

STREPTANTHUS $x = 12$

<i>cordatus</i>	24	Rollins 1939b	—	W: N. Amer.
-----------------	----	---------------	---	-------------

40 VIOLACEAE

VIOLA * $x = 6, 10, 11, 13$. $x_2 = 17$. $x_3 = 27$

$x = 6$

<i>allitariaefolia</i>	12	Miyaji 1929	—	Japan
<i>biflora</i>	12	" "	H	N. Temp.
<i>hastata</i> & 8 spp.	12	Gershoy 1934	H	N. Amer.
<i>canadensis</i> Canada V.	24	" "	H	N. America
<i>chaerophylloides</i> & 23 spp.	24	Miyaji 1929	H	Japan
<i>lanceolata</i> & 8 spp	24	Gershoy 1934	H	E: N. Amer.
<i>epipsila</i>	24	J. Clausen 1926	H	N. Temp.
<i>palustris</i> Marsh V.	48	" 1931c	—	"
<i>sempervirens</i> (<i>sarmentosa</i>)	{ 24	" 1929	H	W: N. Amer.
	48	Gershoy 1934	H	
<i>praemorsa</i> Canary V.	36	" "	H	"
<i>lutea</i>	48	Fothergill 1944	H	Europe
<i>munbyana</i> Algerian V.	48	Griesinger 1937	H	Algeria
<i>nana</i>	48	Fothergill 1944	—	S. Eur., S.W. Asia, N. Africa
<i>nuttallii</i>	48	J. Clausen, T. '36	H	W: N. Amer.
<i>pinnata</i>	48	Gershoy 1934	H	Eur., N. Asia
<i>hallii</i> Oregon V.	60-72	" "	H	W: N. Amer.
<i>albescens</i> (<i>mandschurica</i>)	72	Miyaji 1930	H	N.E. Asia
<i>kitaibeliana</i> Iberian V.	14, 16	J. Clausen 1931d	H	S. Europe
	24, 36, 48			

$x = 10$

<i>adunca</i> (<i>canina</i>) Hook V.	& 5 spp.	20	Gershoy 1934	H	N: U.S.A.
<i>elegantula</i> Bosnian V.		20	J. Clausen 1931d	H	Balkans
<i>odorata</i> Sweet Violet & 3 spp.		20	" 1931c	HP	O.W. Temp.
<i>orbetica</i> & 2 spp.		20	Griesinger 1937	—	S. Europe
<i>reichenbachiana</i> (<i>sylvestris</i>)		20	Valentine 1950	H	Eur., Cauc., Kashmir, N. Afr.
<i>sachalinensis</i> & 2 spp.		20	Miyaji 1929	—	N. Temp.
<i>striata</i> Striped V.	{ 20 † 1B	20	Gershoy 1934	H	N. America
		20	J. Clausen 1929	H	
<i>uliginosa</i>		20	" "	—	Europe
<i>riviniana</i>	35, 40, 46,	47	Valentine 1949	H	Eur., Morocco
<i>bertolonii</i>		40	Griesinger 1937	H	Corsica
<i>calcarata</i> Spurred V.		40	" "	H	Eur. Alps
<i>canina</i> Dog V.	{ 40-47	40	Bruun 1932a	H	N. Temp.
		40-47	J. Clausen 1931b	H	
<i>contempta</i>		40	Fothergill 1944	—	N.W. Europe
<i>elator</i> Tall V.		40	Gershoy 1934	H	Temp. Eurasia
<i>pumila</i> (<i>pratensis</i>)		40	" "	H	Europe
<i>zoysii</i> (<i>calcarata</i>)		40	Griesinger 1937	H	Balkans
<i>howellii</i>	c. 80	80	Gershoy 1934	—	Oregon
<i>orphanidis</i>	20, 21, 22	22	J. Clausen 1931d	—	Macedonia

$x = 13$

<i>declinata</i> (<i>dacica</i>)	26	Griesinger 1937	H	Hungary
<i>diffusa</i>	26	Miyaji 1929	—	Himal., China
<i>saxatilis</i> (<i>alpestris</i>)	26	J. Clausen 1931d	H	E. Eur. Alps
<i>tricolor</i> Pansy, Heartsease	26	" 1931c	H	N. Temp.
4 vars.	26	Fothergill 1944	—	
<i>tricolor</i> × <i>lutea</i>	26-53	" 1938	H	<i>nat. pop.</i> (Eur.)

VIOLA (cont.)

$x = 11$

<i>cornuta</i>	Horned V.	22	J. Clausen 1931d	H	Pyrenees
<i>orthoceras</i>		22	" 1927	—	Caucasus
<i>blanda</i>	Sweet White V.	44	Gershoy 1934	H	E: N. Amer.
<i>incognita</i>		44	" "	H	N. America

$x_2 = 17 (6 + 11)$

<i>arvensis</i>	Field Pansy	34	J. Clausen 1937c	H	Europe
<i>deseglisei</i>		34	Fothergill 1944	—	"
<i>obtusifolia</i>		34	" "	—	"
<i>ruralis</i>		34	" "	—	"
<i>rafinesquii</i>		c. 34	Gershoy 1934	—	N. America
<i>hispida (rothomagensis)</i>		34	J. Clausen 1931c	H	N.E. France

$x_3 = 27 (6 + 10 + 11), 28$

<i>affinis</i>	Leconte V. & 20 spp.	54	Gershoy 1934	H	N. America
<i>pedata</i>	Birdsfoot V.	56	" "	H	"

HYBANTHUS (IONIDIUM) $x = 12$

<i>parviflorus</i>		24	Heilborn 1926	M	S. America
--------------------	--	----	---------------	---	------------

41 RESEDACEAE

RESEDA $x = 6, 7, 10, x_2 = (6 + 7)$

<i>odorata</i>	Mignonette	12	Oksijuk 1929, 1935	HP	N. Africa
<i>phyteuma</i>		12	Eigsti 1936	—	Medit., A. Minor
<i>alba</i>		20	" "	H	Eur., S.W. Asia
<i>lanceolata</i>		24	" "	—	Spain
<i>luteola</i>	Dyer's Green-Weed	{ 24, 26	" "	D	Eur., S.W. Asia
		28	L. & L. 1944b		
<i>virgata</i>		28	Eigsti 1936	—	Spain & Portugal
<i>complicata</i>		28, 30	" "	—	Spain
<i>lutea</i>		48	" "	—	Eur., S.W. Asia
<i>stricta</i>		48	" "	—	Algeria

ASTROCARPUS $x = 10$

<i>sesamoides</i>		20	Oksijuk 1935	H	Spain
-------------------	--	----	--------------	---	-------

42 POLYGALACEAE

BREDEMEYERA $x = 7$

<i>collettioides</i>		14	Covas & S. 1946	—	S. America
----------------------	--	----	-----------------	---	------------

POLYGALA $x = ?$

<i>triflora (erioptera)</i>		38	Hagerup 1932	—	Asia, Trop. Afr.
<i>japonica</i>		42	Suzuka 1950a	—	Temp. & Trop. Asia
<i>vulgaris</i>	Milkwort	{ 28, 32, c. 56	Mattick, T. 1950		
		48, 56	Wulff 1938	—	Eur., Asia M., N. Africa

Group IV

SAXIFRAGALES

45–47

H

PODOSTEMONALES

50, 51

H

POLYGONALES

57, 58

HST

SARRACENIALES

48, 49

H

CARYOPHYLLALES

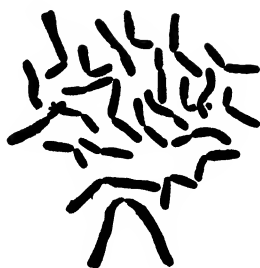
52–56

HS

CHENOPODIALES

59–64

HST



Melandrium album

45 CRASSULACEAE

SEDUM* $x = 4, 5, 6, 7$, etc.

<i>pusillum</i>	8	Baldwin 1940	—	N. America
<i>stellatum</i>	10	" "	H	S. Europe
<i>gracile</i>	12	" 1937	H	"
<i>nevii</i>	12	Clausen & U. 1943	H	W: N. Amer.
<i>dumulosum</i>	14	Uhl 1952	—	China
<i>rhodanthum</i>	14	" "	—	W: N. Amer.
<i>hispanicum</i>	14, 28, 30, 40	Baldwin 1939	H	S. Eur., Asia M.
<i>debile</i>	14-18	Clausen & U. 1943	—	W: N. Amer.
<i>alpestre</i>	16	Favarger 1953	—	Eur. Mtns.
<i>acre</i>	Wall-pepper 16, 48	Wulff 1937b	HM	Eur., N. Asia
<i>stenopetalum</i>	16, 48	Clausen & U. 1943	—	W: N. Amer.
<i>ternatum</i>	16, 24, 32, 48	Baldwin 1942b	H	"
<i>nuttallianum</i>	20	" 1940	—	N. America
<i>tatarinowii</i>	20	" 1937	H	China
<i>annuum</i> & 2 spp.	22	" 1937, 1940	—	Eur., W. Asia
<i>verticillatum</i>	22	Soeda 1944	—	Kamchatka
<i>yezoense</i>	22	" "	—	Japan
<i>rosea</i> (<i>rhodiola</i>) Roseroot	22, 36	Uhl 1952	HM	North & Arctic
<i>pulchellum</i>	22, 44, 66 (64, 72)	Baldwin 1943	H	N. America
<i>oreganum</i>	24	Clausen & U. 1944	H	W: N. Amer.
<i>sordidum</i>	24	Soeda 1944	—	Japan
<i>taquetii</i>	24	Baldwin 1937	—	Korea
<i>telephioides</i>	24	" "	—	E: N. Amer.
<i>maximum</i>	24, 48	" 1939	H	Eur., Cauc.
<i>wrightii</i>	24, 72	Clausen & U. 1943	—	W: N. Amer.
<i>coeruleum</i>	28	Sugiura 1936a	H	Medit.
<i>divergens</i> & 2 spp.	28	Baldwin 1935	H	W: N. Amer.
<i>beyrichianum</i>	28, 56	Clausen & U. 1943	—	"
<i>griffithsii</i>	28, 58	" "	—	N. Amer.
<i>dasyphyllum</i>	28, 42, 56	Baldwin 1939	H	Europe
<i>glanduliferum</i> & 2 spp.	30	Hollingshead 1942	—	W: N. Amer.
<i>spatulifolium</i> & 3 spp.	30	Clausen & U. 1944	H	"
<i>cockerellii</i> & 2 spp.	32	" 1943	—	N. America
<i>album</i>	32, 64	Baldwin 1939	H	Arabia
<i>kamtschaticum</i>	32, 48, 64	Soeda 1944	H	E. Asia
<i>reflexum</i>	{ 34, 68 c. 112	Baldwin 1935 Soeda 1944	H	Europe
<i>mexicanum</i>	36	Skovsted 1934b	—	Mexico
<i>telephium</i>	Orpine, Livelong { 36 48	Baldwin 1937 L. & L. 1948	H	Eur., N. Asia
<i>stelliferum</i> (<i>topsenti</i>)	42-44	Clausen & U. 1944	—	W: N. Amer.
<i>oryzifolium</i>	47	Soeda 1944	—	Japan?
<i>cauticolum</i>	48	" "	H	"
<i>alboroseum</i>	{ 48 50	Baldwin 1937 Soeda 1944	H	China, Japan
<i>anglicum</i>	Stonecrop 48, 144	Baldwin 1939	H	W. Europe
<i>anacampseros</i>	{ 36 c. 50	Favarger 1953 Baldwin 1937	H	C. Europe
<i>sieboldii</i>	50	Soeda 1944	H	China, Japan

SEDUM (cont.)

<i>spectabile</i>	{ 50	Baldwin 1937	H	China, Japan
	51	Soeda 1944		
<i>pachyphyllum</i>	64	W.-Lindschau, T. '38	H	Mexico
<i>palmeri</i>	68	" "	H	"
<i>diffusum</i>	c. 72	Clausen & U. 1943	—	Calif.
<i>oregonense</i>	90	" 1944	—	W: N. Amer.
<i>aizoon</i>	128	Soeda 1944	H	Sib., Japan

ROCHEA $x = 7$

<i>coccinea</i>	14	Baldwin 1936b	H	S. Africa
-----------------	----	---------------	---	-----------

CRASSULA (incl. TILLAEA)* $x = 7, 8$

$x = 7$				
<i>barbata</i> & 10 spp.	14	Baldwin 1936b	H	S. Africa
<i>orbicularis</i> & 4 spp.	14	Uhl 1948	H	"
<i>sarcocaulis</i>	28	Baldwin 1936b	H	"
<i>trachysantha</i>	28	Uhl 1948	H	"
<i>aquatica</i>	42	Hagerup 1941b	—	N. Temp.
<i>arborescens</i>	42	Baldwin 1936b	H	S. Africa
<i>argentea</i> & 2 spp.	42	Uhl 1948	H	"
<i>nodulosa</i>	56	Baldwin 1936b	H	"
$x = 8$				
<i>corallina</i> & 2 spp.	16	" "	H	"
<i>remotifolia</i>	16	W.-Lindschau, T. '38	H	S. Africa
<i>tetragona</i>	48	Baldwin 1936b	H	"
" <i>nana</i> "	34	" "	H	?
<i>nemorosa</i>	44-46	Škovsted 1934b	H	S. Africa
<i>sarmentosa</i>	c. 60	Baldwin 1936b	H	"
<i>multicava</i>	c. 112	" "	H	"
<i>spathulata</i>	c. 148	" "	H	"

ADROMISCHUS $x = 9$

<i>cooperi</i>	18	Uhl 1948	H	S. Africa
<i>poellnitzianus</i>	18	" "	H	"
<i>triflorus</i>	18	" "	H	"
<i>mammillaris</i>	36	" 1953	H	"

COTYLEDON* $x = 9$

<i>decussata</i> & 4 spp.	18	Uhl 1948	H	S. Africa
<i>macrantha</i>	18	Megata 1941	H	"

DIAMORPHA $x = 9$

<i>cymosa</i>	18	Baldwin 1940	—	N. America
---------------	----	--------------	---	------------

SEDELLA (SEDUM)* $x = 9$

<i>congdoni</i> & 2 spp.	18	Baldwin 1940	—	California
--------------------------	----	--------------	---	------------

MUCIZONIA $x = 12$

<i>hispida</i>	24	Uhl 1948	—	Europe
----------------	----	----------	---	--------

OROSTACHYS* $x = 12$

<i>malacophyllus</i> & 1 sp.	24	Soeda 1944	—	E. Asia
------------------------------	----	------------	---	---------

UMBILICUS* $x = 12$

<i>horizontalis</i> & 2 spp.	48	Uhl 1948	—	Eur., N. Africa
------------------------------	----	----------	---	-----------------

AICHRYSON (SEMPERVIVUM) $x = 15$					
<i>dichotomum</i>	30	Skovsted 1934b	H	Canaries	
<i>tortuosum</i>	30	" "	H	"	
AEONIUM (SEMPERVIVUM) $x = 15, 18$					
<i>ciliatum?</i>	36	Skovsted 1934b	—	Canaries	
<i>tabulaeforme (berthelotianum)</i>	36	" "	H	Teneriffe	
<i>undulatum</i>	72-74	" "	H	Canaries	
<i>arboreum</i>	60	" "	H	Medit.	
SEMPERVIVUM $x = 15, 18$					
<i>montanum</i>	42	Favarger 1953	—	S. Eur. Mtns.	
<i>arachnoideum</i>	60	Skovsted 1934b	H	S. Europe	
<i>tectorum</i> Houseleek	72	Rutland 1941	H	Europe, <i>cult</i>	
KITCHINGIA (BRYOPHYLLUM) $x = 17$					
<i>peltata</i>	34	Baldwin 1938	H	Madagascar	
KALANCHOË* $x = 17, 18$					
<i>aegyptiaca</i>	34	Skovsted 1934b	H	Africa	
<i>aromatica</i> & 1 sp.	34	Baldwin 1938	H	Madagascar	
<i>blossfeldiana</i> & 7 spp.	34	Uhl 1948	H	"	
<i>globulifera</i>	34	Sugiura 1936	H	"	
<i>laciniata</i>	34, 68	Baldwin 1938	H	Tropics	
<i>spathulata</i>	34, 68	" "	H	Africa	
<i>varians</i>	68	" "	H	Tropics	
<i>crenata</i>	102	" "	H	Trop. Africa	
<i>faustii</i>	170	Uhl 1948	H	Eritrea	
<i>beharensis</i>	36	Baldwin 1938	H	Madagascar	
<i>bracteata</i>	36	Uhl 1948	H	"	
<i>hildebrandtii</i>	36	Baldwin 1938	H	"	
<i>orygalis</i>	c. 72	Uhl 1948	H	"	
<i>synsepala</i>	72	Baldwin 1938	H	"	
<i>sp.</i>	c. 170	" "	—	—	
<i>sp.</i>	c. 500!	" "	—	—	
BRYOPHYLLUM (KALANCHOË)* $x = 17, 20$					
<i>aliciae</i>	34	Skovsted 1934b	H	Madagascar	
<i>fedtschenkoi</i> & 2 spp.	34	Uhl 1948	H	"	
<i>laxiflorum</i>	34	Baldwin 1938	H	"	
<i>proliferum</i>	34	Soeda 1944	HM	"	
<i>scandens</i>	34	Baldwin 1938	H	"	
<i>gastonis-bonnieri</i>	34 + 0-4B	Uhl 1948	H	"	
<i>miniatum (subpeltatum)</i>	{ 34	Baldwin 1938	H	"	
	{ 70	Uhl 1948		"	
<i>verticillata</i>	68	Baldwin 1938	H	"	
<i>pinnatum (calycinum)</i>	40	Uhl 1948	HM	Tropics	
<i>uniflorum</i>	40	" "	H	Madagascar	
ECHEVERIA $x = 12, 13, 15, 16, 18, 19, 21, 22$, etc. Uhl and Moran 1953					
<i>secunda</i>	64	Rowley unp.	H	W: N. Amer.	
<i>agavoides</i>	112	W.-Lindschau, T. '38	H	Mexico	
<i>retusa</i>	c. 184	Rowley unp.	H	W: N. Amer.	
DUDLEYA* $x = 17$					
<i>edulis</i> & 24 spp.	34	Uhl & Moran 1953	H	W: N. Amer.	
<i>attenuata</i>	34, 68	" "	H	"	

DUDLEYA (cont.)

<i>ingens</i>	34, 68	Uhl & Moran 1953	H	W: N. Amer.
<i>pauciflora</i>	34, 68	" "	—	"
<i>virens</i>	34, 68	" "	—	"
<i>cultrata</i>	68	" "	—	"
<i>gatesii</i>	68	" "	—	"
<i>traskiae</i>	68	" "	—	"
<i>caespitosa</i>	34, 102, 136	" "	—	"
<i>greenii</i>	68, 102	" "	—	"
<i>lanceolata</i>	68, 102, 136	" "	H	"
<i>albiflora</i>	68, 102, 136, c. 170	" "	—	"
<i>palmeri</i>	68, 136, ?170, 238	" "	—	"
<i>anomala</i>	102	" "	—	"
<i>collomiae</i>	136	" "	—	"
<i>saxosa</i>	136, 170	" "	—	"

DUDLEYA × HASSEANTHUS $x = 17$

3 hybrids 34 Uhl & Moran 1953

HASSEANTHUS $x = 17$

<i>elongatus</i>	34	Uhl & Moran 1953	—	W: N. Amer.
<i>variegatus</i>	34	" "	—	"
<i>nesioticus</i>	68	" "	—	"
<i>blochmaniae</i>	34, 68, 102	" "	—	"

GRAPTOPETALUM $x = 17, 31$

<i>amethystinum</i>	68	Uhl & Moran 1953	H	Mexico
<i>paraguayense</i>	136	" "	H	"
<i>rusbyi</i>	62	" "	H	"

47 SAXIFRAGACEAE

VAHLIA $x = 6, 9$

<i>oldenlandioides</i>	12	Skovsted 1934b	—	Trop. Asia, Afr.
<i>viscosa</i>	18	Raghavan & S. 1942	—	" "

ASTILBE $x = 7$

<i>davidii</i>	14	Hamel 1949b	H	N. China
<i>japonica</i>	14	Skovsted 1934b	H	Japan
<i>rivularis</i>	28	Hamel 1949b	H	Himalayas

HEUCHERA $x = 7$

<i>americana</i>	Am. Alum Root	14 + 4B	Skovsted 1934b	H	N. America
<i>cylindrica</i>		14	" "	H	W: N. Amer.
<i>hispidia</i>		14	" "	H	N. America
<i>micrantha</i>		14	" "	H	W: N. Amer.
<i>rubescens</i>		14	Schoennagel 1931	H	"
<i>sanguinea</i>	Coral Bells	14 + 3B	Skovsted 1934b	H	N. Mexico
<i>villosa</i>		14 + 1B	" "	H	N. America

TELLIMA $x = 7$

<i>grandiflora</i>	Alaska Fringe-cup	14	Skovsted 1934b	—	W: N. Amer.
--------------------	-------------------	----	----------------	---	-------------

TOLMIEA $x = 7$

<i>menziesii</i>		28	Skovsted 1934b	H	N.W: N. Amer.
------------------	--	----	----------------	---	---------------

TIARELLA $x = 7, 9$					
<i>cordifolia</i>	Foam-flower	14	Schoennagel 1931	H	E: N. Amer.
<i>polyphylla</i>		{ 14	" "	H	E. Himal., China,
		18	M. & S. 1935	"	Japan
PENTHORUM $x = 8, 9$					
<i>sedoides</i>		16	Baldwin & S. 1951e	—	China
"	Virg. Stonecrop	18	" "	H	N.E: N. Amer.
SAXIFRAGA * $x = 8-14$					
$x = 8$					
<i>androsacea</i>		16	Hamel 1954	H	Alps
<i>nipponica</i>		16	Sakai 1934	—	Japan
<i>sachalinensis</i>		{ 16	" "	—	Sakhalin
		40	M. & S. 1935		
<i>flagellaris</i>		32	Flovik 1940	H	Arctic & Subarc.
<i>hirculus</i>		32	L. & L. 1951	H	N. Temp.
<i>prostii</i>		32	Hamel 1954	H	Cevennes
<i>bronchialis</i>		{ 48	Sakai 1935		
		48, 49	Philp 1934a	H	N. Asia, N. Amer.
		c. 150	Skovsted 1934b		
<i>granulata</i>	Meadow S.	{ 46-60		H	Europe
		c. 52	L. & L. 1951		
<i>hypnoides</i>		{ c. 44	Skovsted 1934b	H	"
		48, 64	Webb 1950		
<i>rosacea</i>		48, 64	" "	H	Eur., Arctic
<i>cernua</i>		{ 50	Chiarugi, T. 1950		
		60	L. & L. 1948	H	N. & Arctic
		64	" 1951		
<i>foliolosa</i>		{ 56	" 1948	—	Arctic
		64	Harmsen 1939		
<i>groenlandica (caespitosa)</i>		{ 64	" "	—	N. Temp., Arctic
		56-65	Skovsted 1934b		
		80	L. & L. 1951		
<i>hieracifolia</i>		{ c. 80	S. & S. 1938	—	" "
		112	Flovik 1940		
		120	L. & L. 1948		
<i>aquatica (petraea)</i>		64	Skovsted 1934b	H	S. Europe
$x = 9$					
<i>cymbalaria</i>	Ivyleaf S.	18	Skovsted 1934b	H	Asia M., Persia
<i>stolonifera</i>	Mother of	{ 36	" "	H	China, Japan
(<i>sarmentosa</i>)	Thousands	36, 54	Okabe 1937		
$x = 10$					
<i>intricata</i>		20	Hamel 1954	H	Pyrenees
<i>tenuis</i>		20	L. & L. 1951	—	North Reg.
<i>melaleuca</i>		40	S. & S. 1938	—	Altai
<i>nivalis</i>	Snowball S.	60	L. & L. 1951	—	North Reg.
$x = 11$					
<i>adscendens</i>	Summer S.	22	Melchers 1935	—	N. Temp.
<i>micranthidifolia</i>		22	Skovsted 1934b	—	S.E: U.S.A.
<i>mutabilis</i>		22	M. & S. 1935	—	Japan
<i>rotundifolia</i>		22	Skovsted 1934b	H	N. Temp.
<i>tridactylites</i>	Rue-leaved S.	22	Melchers 1935	—	Eur., N. Afr.
					S.W. Asia
<i>ajugaefolia</i>		44	Hamel 1954	H	Pyrenees
<i>irrigua</i>		44	Skovsted 1934b	H	Crimea
<i>perdurans</i>		66	" "	H	Transylvania

SAXIFRAGA (cont.)				
<i>tenella</i>	66	Skovsted 1934b	H	E. Alps
<i>x = 12</i>				
<i>caesia</i>	24	Reese 1952a	H	Alps
<i>x = 13</i>				
<i>aizoides</i> & 3 spp.	26	Skovsted 1934b	H	N. Temp., Arctic
<i>aspera</i>	26	Favarger 1949b	H	Alps
<i>cervicornis</i> & 2 spp.	26	Hamel 1954	H	Cors., Sard.
<i>tricuspidata</i>	26	Bøcher & L. 1950	H	Arctic, Subarctic
<i>oppositifolia</i> Purple S.	26, 52	L. & L. 1951	H	N. Temp., Arctic
<i>rivularis</i> Brook S.	<div style="display: inline-block; vertical-align: middle;"><div style="display: inline-block; vertical-align: middle;">26 52 56</div><div style="display: inline-block; vertical-align: middle; font-size: 2em; margin: 0 5px;">}</div><div style="display: inline-block; vertical-align: middle;">Flovik 1940 L. & L. 1948 Bøcher 1938a</div></div>	—	" "	
<i>nathorsti</i> (aiz. \times opp.)	52	" 1941	—	Greenland
<i>x = 14</i>				
<i>aizoon</i> & 7 spp.	28	Skovsted 1934b	H	N. Temp., Arctic
<i>cuneata</i>	28	Hamel 1954	H	Pyrenees
<i>crustata</i>	28	" 1950	H	Tyrol
<i>florulenta</i>	28	" "	H	Alps
<i>mutata</i>	28	" "	H	E. Alps
<i>trifurcata</i>	28	" 1954	H	Pyrenees
<i>crassicaarpa</i>	56	Bøcher 1938a	—	N. America
<i>forbesii</i>	56	Burns 1942	—	"
<i>pennsylvanica</i>	56, 84, 112	" "	H	"
<i>exarata</i>	c. 68	Skovsted 1934b	H	Alps—Persia
PARNASSIA <i>x = 9</i>				
<i>palustris</i> Grass of Parnassus	18, 27 36, 54	<div style="display: inline-block; vertical-align: middle;"><div style="display: inline-block; vertical-align: middle;">18, 27 36, 54</div><div style="display: inline-block; vertical-align: middle; font-size: 2em; margin: 0 5px;">}</div><div style="display: inline-block; vertical-align: middle;">Erlandsson 1942c</div></div>	H	N. Temp.
<i>obtusiflora</i>	36	S. & S. 1941	H	Arctic
BOYKINIA (SAXIFRAGA) <i>x = 11</i>				
<i>tellimoides</i>	22	Skovsted 1934b	H	Japan
CHRYSOSPLENIUM <i>x = 12, 21</i>				
<i>flagelliferum</i>	24	M. & S. 1935	—	E. Asia
<i>tetrandrum</i>	24	Flovik 1940	H	Eur., N. As., N. America
<i>oppositifolium</i>	42	Schoennagel 1931	H	Eur., N. As., India
<i>alternifolium</i> Gold Sax.	48	Skovsted 1934b	H	Eur., N. As., N. America
FRANCOA <i>x = 13</i>				
<i>sonchifolia</i>	52	Schoennagel 1931	H	Chile
KIRENGESHOMA <i>x = 13</i>				
<i>palmata</i>	52	Hamel 1951b	H	Japan
RODGERSIA <i>x = 15</i>				
<i>podophylla</i>	30	Hamel 1949b	H	Japan
<i>pinnata</i>	60	" "	H	Yunnan
<i>sambucifolia</i>	60	" "	H	"
ASTILBOIDES (RODGERSIA) <i>x = 17</i>				
<i>tabularis</i>	34	Hamel 1949b	H	N. China

BERGENIA (SAXIFRAGA) $x = 17$				
<i>ciliata</i>	34	Hamel 1948b	H	Nepal
<i>cordifolia</i>	34	" "	H	Siberia
<i>ligulata</i>	34	" "	H	Himalayas
PELTIPHYLLUM (SAXIFRAGA) $x = 17$				
<i>peltatum</i> Umbrella Pl.	34	Hamel 1948a	H	Calif.

48 DROSERACEAE

DROSOPHYLLUM $x = 6$				
<i>lusitanicum</i>	12	Behre 1929	CH	Portugal, Mor.
DROSERA $x = 10, 14$				
<i>burmanni</i>	20	Venkatasubban 1950	C	Trop. As. & Aust.
<i>intermedia</i>	20	Behre 1929	CH	Eur., N. Amer.
<i>rotundifolia</i> Roundleaf S.	20	" "	BCM	" "
<i>obovata</i> (rot. \times ang.)	30	Shimamura 1941	—	nat. hybrid
<i>anglica</i> English S.	40	Rohweder 1937	C	Europe
<i>capensis</i> Cape Sundew	40	Behre 1929	C	S. Africa
<i>peltata</i>	40	Venkatasubban 1950	C	Australia
<i>cistiflora</i>	60	Behre 1929	C	S. Africa
<i>spathulata</i>	80	" "	C	Austr., N.Z.
<i>indica</i>	28	Venkatasubban 1950	C	O.W. Tropics
DIONAEA $x = 15, 16$				
<i>muscipula</i> Venus' Fly-trap	{ 30 32	{ C. M. Smith 1929 Behre 1929	CH	N. America

49 SARRACENIACEAE

SARRACENIA* $x = 13$				
<i>drummondii</i> Pitcher P. & 8 spp.	26	Bell 1949, Hecht 1949	CH	E: N. America
2 hybrids	26	Tjio 1948	CH	cult
DARLINGTONIA (CHRYSAMPHORA) $x = ?$				
<i>californica</i> Cal. Pitcher Plant	30	Bell 1949	CH	W: N. America

50 PODOSTEMONACEAE

WEDDELINA $x = 20$				
<i>squamulosa</i>	40	Chiarugi, T. 1936	H	N. Brazil

52 ELATINACEAE

BERGIA $x = 6$				
<i>ammanoides</i>	24	Hagerup 1932	—	S. Afr., Tr. Austr.
<i>suffruticosa</i> (odorata)	36	" "	—	Tr. Afr., Persia

ELATINE	$x = ?$				
<i>triandra</i>	Water Pepper	c. 40	Frisedahl 1927	—	Europe

53 CARYOPHYLLACEAE

SF1: ALSINOIDEAE

SAGINA	$x = 6, 11$				
<i>apetala</i>	Common Pearlwort	12	Blackburn, Wright '38	—	Eur., W. As., N. Afr., S. Amer.
<i>ciliata</i>		12	" "	—	Eur., N. Afr.
<i>glabra</i>		18	Rohweder 1939	H	W. Alps, Scotland
<i>subulata</i>		{ 18	" "	H	Europe
		{ 22	Blackburn, Wright '38	H	
<i>procumbens</i>		22	Rohweder 1939	H	N. Temp.
<i>saginoides</i>	Alpine P.	22	Blackburn, Wright '38	—	Alps, Subarctic
<i>maritima</i>	Sea P.	{ 22-24	Wulff 1937a	—	Eur., N. Afr.
		{ 28	Blackburn, T. 1938	—	
<i>nodosa</i>		{ 20-24	Wulff 1937a	—	N. Temp., Subarc.
		{ 56	Blackburn, T. 1938	—	
<i>caespitosa</i>		{ 88	Knaben, L. & L. '48	—	North & Arctic
		{ 100	L. & L. 1944b	—	
SPERGULA	$x = 9$				
<i>arvensis</i>	Corn Spurrey	18	Rohweder 1939	Fo(G)	Cosmop.
<i>vernalis</i>		18	" "	—	C. Europe
SPERGULARIA	$x = 9$				
<i>marginata</i>		18	Castro & F. 1946	—	N. & S. Temp.
<i>rubra</i>	Sand Spurrey	36	L. & L. 1942	—	N. Temp.
<i>salina</i>		36	" "	—	"
POLYCARPON	$x = 9$				
<i>loeflingiae</i>		36	Pal 1952	—	O.W. Tropics
CERASTIUM *	$x = 9, 19$				
$x = 9$					
<i>candidissimum</i>		36	Rohweder 1939	—	Greece
<i>carinthiacum</i>	& 9 spp.	36	Söllner 1952, '53	—	Eur., Cauc.
<i>latifolium</i>	& 2 spp.	36	Favarger & S. 1949	—	"
<i>semidecandrum</i>		36	Brett 1955	—	Eur., N. Africa, W. Asia
<i>arvense</i>		{ 36, 72	Söllner 1952	—	N. Temp.
		{ 36, 38, 72	Brett 1955	—	
<i>cerastoides</i>		{ 36	Mattick, T. 1950	—	Alps, Arctic
		{ 38	Favarger & S. 1949	—	
		{ 40	L. & L. 1948	—	
		{ 34, 38	Bøcher & L. 1950	—	
<i>tetrandrum</i>		{ 36	Rohweder 1939	—	W. Europe
		{ 72	Brett 1955	—	
<i>tomentosum</i>	Dusty Miller	{ 38	Rohweder 1939	H	S.E. Eur., Cauc.
		{ 72	Brett 1955	—	
<i>brachypetalum</i>		{ 52	Söllner 1952	—	Eur., N. Afr., Cau.
		{ 90	Brett 1955	—	
<i>tenoreanum</i>		54	Söllner 1953	—	Eur., Medit.

CERASTIUM (cont.)

<i>alpinum</i>	{ 72, 108, c.	54, 72	Bøcher & L. 1950	—	Arctic, Alps
		144	Brett 1952	—	
<i>atlanticum</i> & 5 spp.		72	Söllner 1952, '53	—	Spain
<i>glomeratum</i> & 1 sp.		72	Brett 1955	—	Cosmop.
<i>glutinosum</i> & 1 sp.		72	Hagerup 1944	—	Eur., N. Asia
<i>regellii</i>		72	Flovik 1940	—	Arctic
<i>pumilum</i>		90, 95	Brett 1955	—	Eur., N. Afr., W. Asia
<i>arcticum</i> (<i>edmonstonii</i>)		108	" "	—	North Reg.
<i>fontanum</i>	{ c. 120		Mattick, T. 1950	—	N. Temp.
	{ c. 144		Söllner 1952		
<i>holosteoides</i> Mouse-ear	{ 126		Hagerup 1944a		
Chickweed	{ 144		Söllner 1952	—	Cosmop.
	{ 136-152		Brett 1955		
<i>macrocarpum</i>		144	Söllner 1952	—	Mesopotamia
sp. aff. <i>holosteoides</i>		162	" "		
x = 19					
<i>anomalum</i>		38	Favarger & S. 1949	—	Eur., S.W. Asia
<i>perfoliatum</i> & 4 spp.		38	Brett 1955	—	Medit., Asia M.

DRYMARIA (CERASTIUM) x = 19

<i>cordifolium</i>	38	Rohweder 1939	—	N. & S. Temp.
--------------------	----	---------------	---	---------------

MOENCHIA x = 9, 19

<i>erecta</i>	36	Blackburn, T. 1937	—	Europe
<i>mantica</i>	38	" "	—	"

ARENARIA x = 10, 11

<i>marschlinsii</i>	20	Woess 1941	—	Europe
<i>serpyllifolia</i> Sandwort	20, 40	" "	—	Eur., N. Amer., Temp. As.
<i>ciliata</i>	40	Horn 1948	H	Europe
<i>humifusa</i>	40	" "	—	"
<i>norvegica</i>	80	" "	—	Scand., Scotland
<i>gothica</i>	100	" "	—	Sweden, Switz., N. England
<i>biflora</i>	22	Favarger 1949b	H	Arctic

HOLOSTEUM x = 10

<i>umbellatum</i>	20	Rohweder 1939		Eur., W. Asia, N. Africa
-------------------	----	---------------	--	-----------------------------

STELLARIA * x = 10, 11, 12, 13.

<i>apetala</i> (<i>pallida</i>)	{ 20	Negodi 1935	—	Europe
	{ 22	Peterson 1936		
<i>neglecta</i>	22, 44	" "	—	"
v. <i>cupaniana</i>	40	Negodi 1935		
<i>bulbosa</i>	33	Peterson 1936	—	"
<i>media</i> Common Chick-weed	{ 40	Negodi 1935		
	{ 42, 44	Peterson 1936	(Fo)	Cosmop.
	{ 28	Pal 1952		
<i>alsine</i> (<i>uliginosa</i>)	{ 24	Rohweder 1939	—	N. Temp.
Bog Stitchwort	{ 26	Mattick, T. 1950		
<i>holostea</i> Easter Bells	26	Peterson 1936	H	Eur., N. Afr., Cauc.
& 2 spp.				
<i>humifusa</i>	26	Flovik	—	North & Arctic

STELLARIA (cont.)					
<i>nemorum</i>	Wood C. & 1 sp.	26	Rohweder	—	Eur., Cauc.
<i>longipes</i>		52	Bøcher & L. 1950	—	N. America
<i>monantha</i>		104	" " "	—	
<i>palustris</i>		c. 130	Peterson 1936	—	C. & N. Eur., Temp. Asia
MOEHRINGIA $x = 12$					
<i>ciliata</i>		24	Favarger 1953	—	Alps
<i>trinervia</i>		24	Rohweder 1939	—	Eur., W. As., Sib.
<i>pentandra</i>		48	de Litardière 1948a	—	Europe
MINUARTIA (ALSINE) $x = 13$					
<i>laricifolia</i>		26	Favarger 1949b	—	Europe
<i>rubella</i>		26	L. & L. 1948	—	North & Arctic
<i>stricta</i>		26	" "	—	
<i>verna</i>	Sandwort	78	Rohweder 1939	—	Eur., N. Amer.
MYOSOTON (STELLARIA) $x = 14$					
<i>aquaticum</i>	Water Chickweed	28	Peterson 1936	—	Eur., N. Asia
HONKENYA $x = ?$					
<i>peploides</i>	Sea Sandwort	{ 48, 64 66	Rohweder 1939 Flovik 1940	—	N. Temp. & Arctic
SF2: SILENOIDEAE ($x = 12-18$)					
AGROSTEMMA (LYCHNIS) $x = 12$					
<i>githago</i>	Corn Cockle	{ 24 48	Rohweder 1939 Favarger 1946	H	Europe
CUCUBALUS $x = 12$					
<i>baccifer</i>	Berry Catchfly	24	Favarger 1946	—	C. & S. Eur., N. Asia
HELIOSPERMA $x = 12$					
<i>alpestre</i>		24	Favarger 1946	—	E. Alps
<i>quadrifidum</i>		24	Rohweder 1939	H	S. Europe
LYCHNIS (PETROCOPTIS) $x = 12$					
<i>chalcadonica</i>	Maltese Cross	24	Rohweder 1939	H	Russia, Sib.
<i>coronaria</i>	Rose Campion	24	" "	H	S. Europe
<i>flos-cuculi</i>	Ragged Robin	24	Favarger 1946	H	Eur., N. Asia
<i>flos-jovis</i>		24	" "	H	S. Europe
<i>haageana</i> (arkwrightii)		24	Blackburn 1928	H	<i>cult</i>
<i>lagascae</i>		24	Sugiura, T. 1938	H	Spain
MELANDRIUM (LYCHNIS) * $x = 12$					
<i>apetalum</i>	& 9 spp.	24	Blackburn 1928	—	North & Arctic
<i>album</i>	Evening or White Campion	♀ 22+XX ♂ 22+XY (48)	Westergaard 1946	H	Eur., N. Africa, W. Asia
<i>rubrum</i>	Morning or Red	24, 48	L. & L. 1942	H	Eur., N. Africa, W. Asia
<i>(dioicum)</i>	Campion				
<i>furcatum</i>		48	Nygren 1949	—	North & Arctic
<i>virginicum</i>	& 4 spp.	48	Blackburn 1928	H	N. America

MELANDRIUM (cont.)

<i>triflorum</i>	72	Bøcher & L. 1950	—	Arctic
<i>laciniatum</i>	96	Blackburn 1928	H	Mex., Calif.

SILENE * $x = 12$

<i>acaulis</i> Moss Champion	24	L. & L. 1944b	H	Alps & Arctic
<i>cucubalus</i> Bladder Champion	24	Blackburn 1928	—	Eur., Temp. Asia, N. Africa
<i>armeria</i> & 4 spp.	24	Favarger 1946	H	S. & C. Europe
<i>otites</i> Spanish Catchfly	24	Lorenzo-Andreu 1951	—	S. & C. Eur., W. Asia
<i>schafta</i> & 56 spp.	24	Blackburn 1928	H	Caucasus
<i>vallesia</i>	{ 24, 48	" "	H	Alps
<i>fortunei</i>	48	D. Löve 1942	—	China
<i>ayachica</i>	30	Heaslip 1951	—	Morocco
<i>pontica</i>	48	Favarger 1946	—	Rumania
<i>campanulata</i> & 3 spp.	48	D. Löve 1942	—	W : N. Amer.
<i>stellata</i> Starry Champion & 2 spp.	48	Kruckeberg 1955	—	E: N. Amer.
<i>ciliata</i>	48	Heaslip 1951	H	S. Europe
	{ 24, 48, 192	Blackburn 1928	H	
	c. 120	Favarger 1946	—	W : N. Amer.
<i>californica</i> & 2 spp.	96	Kruckeberg 1955	—	

VISCARIA (LYCHNIS) $x = 12$

<i>vulgaris</i> German Catchfly	24	D. Löve 1942	H	Eur., N. Asia
<i>alpina</i> Red Alpine C.	24	Rohweder 1939	—	North & Arctic
<i>sartorii</i>	24	Favarger 1946	—	Balkans

SAPONARIA * $x = 14$

<i>officinalis</i> Soapwort & 3 spp.	28	Favarger 1946	HM	Eur., Temp. Asia
<i>pumila</i> & 5 spp.	28	Blackburn & B. 1930	H	Alps

VELEZIA $x = 14$

<i>rigida</i>	28	Favarger 1946	—	Medit.—Afghan.
---------------	----	---------------	---	----------------

DRYPIS $x = 15$

<i>spinosa</i>	60	Favarger 1946	H	S. Europe
----------------	----	---------------	---	-----------

KOHLRAUSCHIA $x = 15$

<i>velutina</i>	30	Bøcher <i>et al.</i> 1953	—	W. & C. Europe
<i>prolifera</i>	30, 60	" " "	H	" "

TUNICA (DIANTHUS) $x = 15$

<i>olympica</i>	30	Blackburn, T. 1931	H	Asia Minor
<i>saxifraga</i> Tunic Flower	60	" "	H	S. Eur.—Persia

VACCARIA $x = 15$

<i>pyramidata</i> (<i>segetalis</i>)	30, 60	Favarger 1946	H	Eur., Asia
--	--------	---------------	---	------------

DIANTHUS * $x = 15$

<i>alpinus</i>	30	Gentscheff 1937b	H	Alps
<i>arboreus</i>	30	" "	H	Greece, Crete
<i>armeria</i> Deptford Pink	30	" "	H	Eur., Cauc.
<i>atrorubens</i>	30	" "	H	S. Europe
<i>barbatus</i> Sweet William	30	Favarger 1946	H	S. Eur., S. Russia
<i>capitatus</i>	30	Gentscheff 1937b	H	E. Eur., S. Russia
<i>cruentus</i>	30	" "	H	Greece

DIANTHUS (cont.)

<i>cyri</i>	30	Gentscheff 1937b	H	Asia M.—Afghan.
<i>frivaldskyanus</i>	30	" "	H	Thrace
<i>gracilis</i>	30	" "	H	Macedonia
<i>graniticus</i>	30	" "	H	S. France
<i>japonicus</i> Japanese C.	30	Sugiura 1936a	HP	Japan, Manch.
<i>knappii</i>	30	Gentscheff 1937b	H	E. Balkans
<i>liburnicus</i>	30	" "	H	S. Europe
<i>microlepis</i>	30	Rohweder 1934	H	Greece
<i>nardiformis</i>	30	Gentscheff 1937b	H	S.E. Europe
<i>neglectus (glacialis)</i>	30	" "	H	S. Europe
<i>nitidus</i>	30	" "	H	C. Europe
<i>noëanus</i>	30	" "	H	Rumania
<i>pancicii</i>	30	" "	H	Bulgaria
<i>pelviformis</i>	30	" "	H	Serbia, Bulgaria
<i>pinifolius</i>	30	Rohweder 1934	H	Greece
<i>pruinosis (haematocalyx)</i>	30	Gentscheff 1937b	H	"
<i>sylvestris</i>	30	" "	H	Alps
<i>ramosissimus (pallidiflorus)</i>	30	" "	H	S. Russia
<i>tergestinus</i>	30	" "	H	Dalmatia
<i>viscidus (grisebachii) & 11 spp.</i>	30	" "	H	Greece
<i>carthusianorum</i> Cluster-head P.	30, 60	Favarger 1946	H	C. & S. Europe
as <i>subneglectus</i>	30	Gentscheff 1937b		
as <i>tenuifolius</i>	30	" "		
as <i>subfastigiatus</i>	30	Ishii 1930		
<i>caryophyllus</i> Clove Pink, Carnation	30, 90	Gentscheff 1937b	HP	S. Eur., N. Africa
<i>chinensis</i> Rainbow Pink	30, 60	" "	H	Eur., Temp. Asia
as <i>sinensis, collinus, laciniatus</i>	60, 90	Rohweder 1934, Ishii 1930		
<i>deltoides</i> Maiden Pink	30	Favarger 1946	H	Eur., Temp. Asia
as <i>glaucus</i>	60	Gentscheff 1937b		
<i>monspessulanus</i>	30, 60, 90	Janaki Ammal & S. '52	H	S.W. Europe
<i>plumarius</i> Cottage Pink	30, 90	Rohweder 1930	H	S.E. Europe
as <i>lumnitzeri</i>	60	Gentscheff 1937b		
<i>pungens</i>	{ 30	Lorenzo-Andreu 1951	H	Spain
	{ 90	Gentscheff 1937b		
<i>superbus</i>	30, 60	Darlington 1937a	H	Eur., N. Asia
as <i>wimmeri</i>	60	Ishii 1930		
<i>attenuatus</i> Rosetuft Pink	60	Gentscheff 1937b	H	Spain, Morocco
<i>brachyanthus (subacaulis)</i>	60	" "	H	Spain
<i>furcatus</i>	60	" "	H	Ital. Alps
<i>haematocalyx</i>	60	Rohweder 1934	H	Greece
<i>hirtus</i>	60	" "	H	France
<i>hispanicus</i>	60	" "	H	Spain
<i>kitaibelii (petraeus)</i>	60	Gentscheff 1937b	H	S.E. Europe
<i>latifolius</i>	60	Shibukawa 1930	H	cult
<i>leptopetalus</i>	60	Gentscheff 1937b	H	Maced., Cauc.
<i>orbelicus (cruentus)</i>	60	Rohweder 1934	H	Greece
<i>requienii</i>	60	Gentscheff 1937b	H	S. Europe
<i>sternbergii & 2 spp.</i>	60	Rohweder 1934	H	"
<i>strictus (bebius, integer) & 2 spp.</i>	60	Gentscheff 1937b	H	Dalm., Greece
<i>arenarius</i>	60	" "	H	N. Europe
as <i>praecox</i>	90	" "		

DIANTHUS (cont.)

<i>campestris</i>	Field Carnation	60, 90	Gentscheff 1937b	H	Caucasus
<i>gallicus</i>		60, 90	" "	H	France, Spain
<i>gratianopolitanus</i>	Cheddar	60, 90	" "	H	W. & C. Europe
(<i>virginicus</i>)	Pink				
<i>allwoodii</i>		90	Shibukawa 1930	H	<i>cult</i>
<i>anatolicus</i>		90	Gentscheff 1937b	H	Asia Minor
<i>angulatus</i>		90	" "	H	Himalayas
<i>boissierii</i>		90	" "	H	S. Spain
<i>crinitus</i>		90	" "	H	Asia M.—N.W.
					India
<i>fragrans</i> (<i>liboschitzianus</i>)		90	" "	H	Caucasus
<i>holtzeri</i>		90	" "	H	Turkestan
<i>pubescens</i> & 2 spp.		90	Ishii 1930	H	Greece
<i>seguieri</i> (<i>caucasicus</i>)		90	Gentscheff 1937b	H	S.W. Europe
<i>squarrosus</i>		90	" "	H	Russia—Sib.
<i>zonatus</i> (<i>plumarius</i> ?) & 5 spp.		90	" "	H	Greece, Asia M.

GYPSOPHILA $x = 17$

<i>elegans</i>	{	220 (40)	Furusato 1940	H	Caucasus
		34	Blackburn 1928		
<i>altissima</i>		34	Favarger 1946	—	E. Eur.—C. Asia
<i>arietioides</i>		34–36	" "	H	Persia
<i>fastigiata</i>		34	Skalinska 1950a	H	C. Europe
<i> muralis</i>		34	L. & L. 1942b	H	Europe
<i>repens</i>		34	Favarger 1946	H	S. Europe
<i>viscosa</i>		34	Blackburn, T. 1931	H	Syria
<i>arenaria</i>	34, c.	51	Favarger 1946	—	Europe
<i>arrostii</i>		68	Blackburn, T. 1931	—	S. Eur., Asia M.
<i>trichostoma</i>		68	" "	H	Cauc., Turkest.
<i>pacifica</i>		68	Favarger 1946	H	Siberia
<i>libanotica</i>		36	" "	H	Lebanon

54 MOLLUGINACEAE

MOLLUGO $x = 9$

<i>cerviana</i>	{	18	Sugiura 1936a	V	O.W. Subtrop.
		18	" 1944	—	
<i>pentaphylla</i> (<i>stricta</i>)		36	Raghavan & S. 1940a	—	Trop. Asia, Polyn.
<i>oppositifolia</i>		36	" "	V	O.W. Trop.
<i>racemosa</i>		36	" "	—	India
<i>nudicaulis</i>		54	" "	—	Trop. & Subtrop.
<i>verticillata</i>		64	Sugiura 1936a	—	Trop. Am & Afr.

GISEKIA $x = 9$

<i>pharnaceoides</i>	36	Raghavan & S. 1940a	—	India
----------------------	----	---------------------	---	-------

55 FICOIDACEAE

I. Semi-succulent Group: $x = 8$

TRIANTHEMA $x = 8$

<i>decandra</i>	16	Raghavan & S. 1940a	—	Trop. Asia
<i>pentandra</i>	Horse Purslane	16	Hagerup 1932 (V)	Trop. Asia, Afr.

TRIANTHEMA (cont.)

<i>polysperma</i>	16	Hagerup 1932	—	India, Trop. Afr.
<i>monogyna</i> (portulacastrum)	26	Raghavan & S. 1940a	V	Trop. Asia
<i>cristallina</i>	(28) 32	Hagerup 1932	V	Trop. Asia, Africa

TETRAGONIA $x = 8$

<i>crystallina</i>	32	Sugiura 1940	V	Peru
<i>echinata</i>	32	„ 1936b	V	S. Africa
<i>expansa</i> N. Zealand Spinach	32	„ „	HV	Australasia, Japan

SESUVIUM $x = 8$

<i>portulacastrum</i> Seaside Purslane	48	Raghavan & S. 1940a	V	Tropics
as <i>Aizoon canariense</i>	32	Sugiura 1936		

II. Succulent Group: $x = 9$

All genera in this group have the same basic number ; all species are orthoploid ; $2n = 18, 27, 36, 54, 72$, and 108.

(i) Purely diploid genera

APATESIA				
<i>helianthoides</i>	18	Rowley unp.	—	S. Africa
APTENIA				
<i>cordifolia</i>	18	Snoad 1951	—	„
ARGYRODERMA				
<i>ovale</i>	18	„ „	H	„
<i>villetii</i>	18	de Vos 1947	H	„
ASTRIDIA				
<i>maxima</i>	18	Snoad 1951	H	„
BIJLIA				
<i>cana</i>	18	„ „	H	„
CARPANTHEA				
<i>pomeridiana</i>	18	de Vos 1937	—	„
CARPOBROTUS*				
<i>edulis</i> & 2 spp.	18	„ „	FSb	„
<i>fourcadei</i>	18	Snoad 1951	Sb	„
CARRUANTHUS				
<i>caninus</i>	18	„ „	H	„
CEROCHLAMYS				
<i>pachyphylla</i>	18	„ „	H	„
CONICOSIA*				
<i>capensis</i> & 2 spp.	18	„ „	H	„
CONOPHYLLUM				
<i>herrei</i>	18	de Vos 1947	H	„
CORPUSCULARIA				
<i>lehmannii</i>	18	Snoad 1951	H	„

CRYOPHYTUM* <i>crystallinum</i> & 1 sp.	18	Sugiura 1936a	HV	S. Africa
CYLINDROPHYLLUM <i>calamiforme</i>	18	de Vos 1947	H	„
DACTYLOPSIS <i>digitata</i>	18	Wulff 1940	H	„
DIDYMAOTUS <i>lapidiformis</i>	18	„ 1944	H	„
DINTERANTHUS <i>microspermus</i>	18	Snoad 1951	H	„
DOROTHEANTHUS <i>bellidiformis</i>	18	de Vos 1947	H	„
ECHINUS <i>maximiliani</i>	18	Snoad 1951	H	„
EREPSIA <i>inclaudens</i>	18	„ „	H	„
GLOTTIPHYLLUM* <i>arrectum</i> & 1 sp. <i>linguiforme</i> <i>uncatum</i> & 2 spp.	18 18 18	de Vos 1947 Takagi 1938 Sugiura 1940	H H H	„ „ .
HYMENOGYNE <i>glabra</i>	18	Rowley unp.	—	„
IMITARIA <i>muirii</i>	18	Wulff 1940	H	„
LITHOPS* <i>helmuti</i> <i>lesliei</i> & 2 spp. <i>terricolor</i>	18 18 18	Snoad unp. de Vos 1947 Snoad unp.	H H H	„ „ „
MACHAIROPHYLLUM <i>minor</i>	18	de Vos 1947	H	„
MEYEROPHYTUM <i>meyeri</i>	18	„ „	H	„
MITROPHYLLUM* <i>grande</i> & 1 sp. <i>mitratum</i>	18 18	Wulff 1940 de Vos 1947	H H	„ „
MUIRIA <i>hortenseae</i>	18	Wulff 1940	H	„
NANANTHUS* <i>aloides</i> & 1 sp. <i>pole-evansii</i> <i>vittatus</i>	18 18 18	Snoad 1951 Rowley unp. „	H H H	„ „ „

ODONTOPHORUS				
<i>marlothii</i>	18	de Vos 1947	H	S. Africa
OSCULARIA				
<i>caulescens</i>	18	Propach 1934	H	"
<i>deltoides</i>	18	Sugiura 1940	H	"
PLEIOSPILOS*				
<i>bolusii</i> & 4 spp.	18	de Vos 1947	H	"
<i>prismaticus</i>	18	Snoad 1951	H	"
PRENIA				
<i>relaxata</i>	18	" "	—	"
PSILOCAULON				
<i>granulicaule</i>	18	" "	—	"
RHINEPHYLLUM				
<i>comptonii</i>	18	" "	H	"
<i>macradenium</i>	18	de Vos 1947	H	"
SCHWANTESIA				
<i>herrei</i>	18	" "	H	"
SPHALMANTHUS				
<i>canaliculatus</i>	18	Snoad 1951	H	"
STOMATIUM*				
<i>conradii</i> & 2 spp.	18	" "	H	"
<i>fulleri</i>	18	de Vos 1947	H	"
TITANOPSIS				
<i>calcareo</i>	18	" "	H	"
(ii) Genera including polyploid species				
ARIDARIA*				
<i>tetragona</i>	18	Snoad 1951	—	"
<i>viridiflora</i>	18	de Vos 1947	—	"
<i>brevifolia</i> & 5 spp.	36	" "	—	"
<i>quaterna</i>	c. 108	" "	—	"
BERGERANTHUS*				
<i>multiceps</i> & 1 sp.	18	Snoad 1951	H	"
<i>scapiger</i>	{ 27	" "	H	"
	{ 36	Johansen 1933		
<i>vespertinus</i>	36	Snoad 1951	H	"
CEPHALOPHYLLUM*				
<i>aureorubrum</i>	18	de Vos 1947	H	"
<i>subulatoide</i>	18	Snoad 1951	H	"
<i>framesii</i> & 3 spp.	36	de Vos 1947	H	"
<i>platycalyx</i>	36	Snoad 1951	H	"
CHEIRIDOPSIS*				
<i>carnea</i> & 2 spp.	18	" "	H	"
<i>velutina</i>	18	de Vos 1947	H	"
<i>inaequalis</i>	27	Snoad 1951	H	"

CHEIRIDOPSIS (cont.)

<i>bibracteata</i> & 1 sp.	36	Snoad 1951	H	S. Africa
<i>aspera</i> & 4 spp.	36	de Vos 1947	H	"

CONOPHYTUM

<i>flavum</i>	36	" "	H	"
---------------	----	-----	---	---

DELOSPERMA*

<i>aberdeenense</i>	18	Snoad 1951	H	"
<i>crassum</i>	18	de Vos 1947	—	"
<i>herbeum</i> & 2 spp.	18	Sugiura 1939	—	"
<i>ecklonis</i> & 1 sp.	36	de Vos 1947	H	"
<i>rogersii</i>	36	Snoad 1951	H	"
<i>cooperi</i>	72	Sugiura 1944	H	"

DISPHYMA

<i>crassulina</i>	18	Snoad unp.	—	"
<i>crassifolia</i>	36	" 1951	—	"
<i>clavellata</i>	54	" "	—	"

DROSANTHEMUM

<i>autumnale</i>	36	de Vos 1947	H	"
<i>candens</i>	36	Snoad 1951	H	"
<i>luederitzii</i>	36	Propach 1934	H	"

EBERLANZIA

<i>hospitalis</i>	72	de Vos 1947	—	"
-------------------	----	-------------	---	---

FAUCARIA*

<i>bosscheana</i> & 1 sp.	18	de Vos 1947	H	"
<i>lupina</i>	18	Propach 1934	H	"
<i>militaris</i>	18	Rowley unp.	H	"
<i>felina</i> & 2 spp.	18	Snoad 1951	H	"
<i>haagei</i>	27	" "	H	"

GIBBAEUM*

<i>album</i> & 12 spp.	18	de Vos 1951	H	"
<i>gibbosum</i> & 1 sp.	18	Wulff 1940	H	"
<i>angulipes</i>	{ 18	" "	H	"
	{ 36	de Vos 1951		
<i>pachypodium</i>	18, 36	" "	H	"
<i>pubescens</i>	{ 18	" "	H	"
	{ c. 54	Johansen 1933		
<i>haagei</i>	36	Wulff 1940	H	"
<i>luteoviride</i>	36	" 1944	H	"
<i>shandii</i> & 2 spp.	36	de Vos 1947, 1951	H	"
<i>geminum</i>	{ 36	" 1951	H	"
	{ 54	Wulff 1940		

HEREROA*

<i>dolabriformis</i> & 2 spp.	18	de Vos 1947	H	"
<i>incurva</i> & 1 sp.	18	Snoad 1951	H	"
<i>crassa</i>	36	de Vos 1947	—	"

HYMENOCYCLUS*

<i>luteus</i> & 2 spp.	18	de Vos 1947	H	"
<i>purpureocroceus</i>	27, 36	" "	H	"
<i>purpureus</i>	36	Snoad 1951	H	"

LEIPOLDTIA*

<i>nelii</i>	18	de Vos 1947	—	S. Africa
<i>britteniae</i> & 1 sp.	36	„ „	—	„

MESEMBRYANTHEMUM*

<i>aureum</i> & 5 spp.	18	„ „	H	„
<i>blandum</i> & 3 spp.	18	Sugiura 1944	H	„
<i>haworthii</i> & 4 spp.	18	Snoad 1951	H	„
<i>brownii</i>	27	„ „	H	„
<i>falciformis</i> & 1 sp.	36	Propach 1934	—	„
<i>glaucum</i>	36	Snoad 1951	H	„
<i>reptans</i>	36	de Vos 1947	—	„

MICROPTERUM

<i>sessiliflorum</i>	36	Propach 1934	—	„
----------------------	----	--------------	---	---

RUSCHIA*

<i>crassa</i> & 4 spp.	18	de Vos 1947	—	„
<i>perfoliata</i> & 3 spp.	18	Snoad 1951	H	„
<i>rigidicaulis</i>	18	Sugiura 1944	—	„
<i>tenella</i>	18	Propach 1934	—	„
<i>karrachabensis</i>	{ 18	de Vos 1947	—	„
	{ 36	Snoad 1951	—	„
<i>addita</i>	18, c. 54	de Vos 1947	—	„
<i>connata</i>	54	„ „	—	„
<i>kakamasensis</i>	54	„ „	—	„
<i>uncinata</i>	54	Snoad 1951	H	„

TRICHODIADEMA

<i>barbatum</i>	18	„ „	H	„
<i>bulbosum</i>	36	„ „	H	„
<i>setuliferum</i>	36	„ unsp.	H	„

VANHEERDIA*

<i>primosii</i> & 1 sp.	18	Wulff 1944	H	„
<i>divergens</i>	36	„ „	H	„

VANZIJLIA*

<i>angustipetala</i> & 1 sp.	36	de Vos 1947	—	„
------------------------------	----	-------------	---	---

56 PORTULACACEAE

PORTULACA x = 4, 9

<i>species</i>	8	Steiner 1944	—	Arkansas
<i>pilosa</i>	16	„ „	—	N. & S. Amer.
<i>smallii</i>	16	„ „	—	E. U.S.A.
<i>grandiflora</i>	{ 18, (36)	Furusato 1940	H	Brazil
	{ 18	Steiner 1944	—	Venezuela
<i>pusilla</i>	18	„ „	—	India, Java
<i>tuberosa</i>	18	Raghavan & A.R.S. 1941b	—	
<i>marginata</i>	{ 36	Steiner 1944	—	Venezuela
	{ 18, 54	Hagerup 1932	—	O.W. Tropics
<i>quadrifida</i>	48	Raghavan & A.R.S. 1941b	—	
<i>oleracea</i> Purslane	54	Steiner 1944	V	Trop., Subtrop.

CLAYTONIA $x = 6$					
<i>asarifolia</i>		24	Blackburn, T. 1937	—	N. As., N: N. Am.
<i>perfoliata</i>	Winter P.	36	Rutland 1941	V	N. America
TALINUM $x = 6$					
<i>appalachianum</i>		24	Steiner 1944	—	E: U.S.A.
<i>mengesii</i>		24	" "	—	S.E.: U.S.A.
<i>patens (paniculatum)</i>		24	" "	H(V)	Trop. Amer.
<i>purpureum</i>		24	Sugiura 1935	—	"
<i>teretifolium</i>	Fame	{ 24, 48	Steiner 1944	H	E: N. Amer.
	Flower		Bowden 1945b		
<i>aurantiacum</i>		48	Steiner 1944	—	Texas
<i>parviflorum</i>		48	" "	—	W: N. Amer.
<i>triangulare</i>		{ 48	Sugiura 1940	HV	Trop. Amer.
			Steiner 1944		
<i>variegatum</i>		72	" "	—	" "
CALANDRINIA $x = 8, 10, 11, 12.$ $x_2 = (11 + 12)$					
<i>grandiflora</i>	Rock P.	{ 16	Sugiura 1936a	H	Chile
			Blackburn, T. 1937		
			Sugiura 1940		
<i>umbellata</i>		20	" 1936a	H	Peru
<i>compressa</i>		24	" 1937a	H	Chile
<i>discolor</i>		24	" 1940	H	"
<i>menziesii (speciosa)</i>		24	" 1936a	H	Calif.
<i>procumbens</i>		24	" "	—	Chile
<i>clliata (caulescens)</i>		{ 24	Heiser & W. 1948	H	Peru, Ecuador
			Blackburn, T., 1937		
			Sugiura 1940		
MONTIA $x = 9, 10$					
<i>lamprosperma</i>		18	Hagerup 1941b	—	N. Temp.
<i>minor</i>		18	Scheerer 1940	—	"
<i>verna</i>		18	Hagerup 1941b	—	"
<i>rivularis</i>		{ 18	" "	—	"
			Scheerer 1940		

57 POLYGONACEAE

OXYRIA $x = 7$					
<i>digyna</i>	Mountain Sorrel	14	L. & L. 1948	(V)	Alpine
<i>elatior</i>		14, 42	Edman 1929	—	Arctic
KOENIGIA $x = 7$					
<i>islandica</i>		28	L. & L. 1948	—	Himal., Arctic
PTEROSTEGIA $x = 7$					
<i>drymarioides</i>		28	Sugiura 1936b	—	California
RUPRECHTIA $x = 7$					
<i>polystachya</i>		28	Covas & S. 1947	—	S. America
RUMEX $x = 7, 8, 9, 10$					
		$x = 7$			
<i>acetosa</i>	Sorrel,	♀: 12+XX	Ono 1928,	V	N. Temp.
	Dock	♂: 12+XY ₁ Y ₂	A. Löve 1944a		
		inter: 21, 22, 29	Yamamoto 1934		

RUMEX (cont.)

<i>angiocarpus</i>		♀: 12 + XX	A. Löve 1944b	—	S. & C. Eur.,
		♂: 12 + XY	"		N. Africa
<i>montanus</i>	French	♀: 12 + XX	Ono 1930a	V	Europe
	Sorrel	♂: 12 + XY ₁ Y ₂	"		
<i>thyrsiflorus</i>		" "	A. Löve 1944a	—	"
<i>tenuifolius</i>		♀: 24 + XXXX	" 1944b	—	C. & N. Eur.,
		♂: 24 + XXXY	" "		Arctic
<i>acetosella</i>	Sheep's S.	42, (41, 43)	" "	—	Europe
<i>graminifolius</i>		56	" "	—	Kamchatka
		x = 8			
<i>pallidus</i> (<i>salicifolius</i>)		16	Jensen 1936	—	N. America
		x = 9			
<i>hastatus</i>		18	Ono 1935	—	Himalayas
<i>papilio</i>		18	" "	—	Morocco
<i>vesicarius</i>		18	Datta 1952	—	Med., N. Afr.,
					India
<i>nepalensis</i>		54	Sugiura 1936a	—	W. Asia—Malaya
		x = 10			
<i>alpinus</i>	Monk's Rhubarb	20	Takenaka 1941	MV	C. & S. Europe,
<i>conglomeratus</i>	Sharp Dock	20	A. Löve 1942	—	Asia Minor, Cauc.
					Eur., N. Africa,
					Asia Minor
<i>flexuosus</i>		20	Takenaka 1941	—	New Zealand
<i>pulcher</i>	Fiddle D.	20	Heiser & W. 1948	—	Eur., S.W. Asia
<i>sanguineus</i>	Blood Wort	20	A. Löve 1942	M	Eur., N. Afr.,
					Cauc., C. Asia
<i>scutatus</i>	Garden S.	20	" "	V	C. & S. Eur., N.
		(40)	Fikry 1930		Africa, W. Asia
<i>dentatus</i>		40	Pathak <i>et al.</i> 1949	—	Himalayas
<i>maritimus</i>	Golden D.	40	A. Löve 1942	—	Eur., Cauc., Am.
<i>obtusifolius</i>		40	" "	—	Eur., Azores
<i>palustris</i>	Marsh D.	40	" "	—	Eur., Temp. Asia
<i>crispus</i>	Curly Dock	60	" "	M	Eur., Africa
<i>orientalis</i>		60	Takenaka 1941	—	Greece, Asia M.
<i>patientia</i>	Herb Patience	60	Kihara 1927	MV	S. Eur., S.W. Asia
<i>domesticus</i>		{ 60	A. Löve 1942	V	Europe
		80	Takenaka 1941		
<i>longifolius</i>		60, 80	Kihara & O. 1926	V	N. Temp.
<i>cordifolius</i>		80	Takenaka 1941	—	Eur., N. Asia
<i>hymenosepalus</i>	Canaigre	100	Kihara 1927	D	W: N. Amer.
<i>britannicus</i>		160	Jensen 1936	—	N. Amer. (<i>sic</i>)
<i>aquaticus</i>		c. 200	A. Löve 1942	MV	Eur., N. Asia
<i>arcticus</i>		c. 200	L. & L. 1948	—	Sib., Arctic
<i>hydrolapathum</i>	Wild Rhubarb	c. 200	A. Löve 1942	MV	Europe
<i>maximus</i>		c. 200	" "	—	"

FAGOPYRUM x = 8

<i>cymosum</i>	Perennial B.	16	Jaretsky 1928b	G	Himal., China
<i>emarginatum</i>		16	" "	G	Eur., N. Asia
<i>esculentum</i>	Buckwheat	16	" 1927	G	<i>cult</i>
		(32, 64)	Sinoto & S. 1940		

FAGOPYRUM (cont.)

<i>tataricum</i> Rye B.	16 (32)	Sando 1939 " "	G	<i>cult</i>
EMEX $x = 10$				
<i>spinosa</i>	20	Sugiura 1937b	—	Eur., N. Afr.
MUEHLENBECKIA $x = 10$				
<i>complexa</i>	20	Jaretsky 1928b	H	New Zealand
<i>platyclados</i>	20	" "	H	Solomons
<i>sagittifolia</i>	40	" "	—	S. America
POLYGONUM * $x = 10, 11, 17$				
$x = 10$				
<i>baldschuanicum</i>	20	Schnack & F. 1946	H	Bokhara
<i>equisetiforme</i>	20	Castro & F. 1946	H	Med., S.W. Asia
<i>foliosum</i>	20	L. & L. 1948	—	Europe
<i>dumetorum</i>	20	Jaretsky 1928b	—	Eur., N. & W. Asia
<i>maritimum</i> Sea Knotgrass	20	" "	—	N. Temp.
<i>hydropiper</i> Smartweed	{ 20 22	{ " " S. & S. 1938	M	"
<i>convolvulus</i> Black Bindweed	{ 20 40	{ Jaretsky 1928b A. Löve 1942	—	"
<i>argyrocoleon</i>	40	Heiser & W. 1948	—	Persia
<i>minus</i>	40	Wulff 1939b	—	Temp. Eur. & Asia
<i>mite</i>	40	" "	—	Eur., Asia M.
<i>pusillum</i>	40	L. & L. 1948	—	Europe
<i>aviculare</i> Knot Grass	40, 60	" "	M	Cosmop.
<i>tinctorium</i> Chinese Indigo	40	Sugiura 1936a	D	China
<i>divaricatum</i>	100	Jaretsky 1928b	—	Siberia
$x = 11$				
<i>lapathifolium</i>	22	L. & L. 1948	—	N. & S. Temp.
<i>multiflorum</i>	22	Suzuka 1950	H	China, Japan
<i>orientale</i>	22	Jaretsky 1928b	H	Tropics
<i>pamiricum</i>	22	S. & S. 1938	—	Turkestan
<i>tomentosum</i>	22	L. & L. 1942	—	O.W. Tropics
<i>viscosum</i> & 4 spp.	22	Sugiura 1936b	—	Himalayas
<i>nodosum</i>	22, 44	L. & L. 1942	—	N. Temp., S. Afr.
<i>bioritsuense</i>	44	Sugiura 1936b	—	Formosa
<i>flaccidum</i>	44	" "	—	India, Malaya
<i>japonicum</i>	44	" "	—	Japan
<i>major</i>	44	Jaretsky 1928b	—	N. Eur. & Asia
<i>persicaria</i>	44	" "	—	N. Temp.
<i>bistorta</i> Bistort	{ 44 46	{ " " S. & S. 1938	HMRV	Eur., Asia M., C. Asia
Snake-root	46	" "	—	S. Eur., N. Asia
<i>polymorphum</i>	c. 66	Jaretsky 1928b	H	N. Temp.
<i>amphibium</i> Willow Grass	c. 88	" "	H	Japan
<i>cuspidatum</i>	{ c. 88 c. 100 c. 110 c. 132	{ S. & S. 1938 Flovik 1940 L. & L. 1948 Skalinska 1950a	R	Arctic, Alpine
$x = 17?$				
<i>sieboldii</i> Mex. Bamboo	34	Sugiura 1936b	H	Japan

TOVARA (POLYGONUM) $x = 11$					
<i>filiformis</i>	44	Sugiura 1936b	Fo	E. Asia	
PLEUROPTERUS $x = 11$					
<i>multiflorus</i>	22	Sugiura 1936b	—	China, Japan	
TRIPLARIS $x = 11$					
<i>surinamensis</i>	22	Jaretsky 1928b	H	Trop. Amer.	
RHEUM $x = 11$					
<i>collinianum</i>	22	Edman 1929	—	China	
<i>emodi</i> Redveined R.	22	Chin & Y. 1947	M	Himalayas	
<i>franzbachii</i>	22	" "	—	Temp. Asia	
<i>palmatum</i> Chinese R.	22	Jaretsky 1928b	HMV	Mongolia	
<i>spiciforme</i>	22	" "	—	Himalayas	
<i>officinale</i> Rhubarb	{ 22	" "	M	<i>cult</i>	
	44	Suzuka 1950			
<i>undulatum</i> Bucharian R.	{ 22	China & Y. 1947	—	C. Asia	
	44	Jaretsky 1928b			
<i>altaicum</i>	44	Chin & Y. 1947	—	Altai	
<i>australe</i>	44 (66)	" "	—	Himalayas	
<i>compactum</i>	44	" "	—	Mongolia	
<i>crassinervium</i>	44	Jaretsky 1928b	—	?	
<i>rhaponticum</i> English R.	44	" "	MV	S. Sib., Volga	
<i>ribes</i> Currant-fruited R.	44	Edman 1929	V	Syria, Afghan.	
<i>sanguineum</i> Red Rhubarb	44	" "	V	<i>cult</i>	
(<i>macropterum</i>)					
<i>tataricum</i>	44	Chin & Y. 1947		C. Asia	
<i>webbianum</i>	44	Edman 1929	—	Himalayas	
<i>wittrockii</i>	44	" "	—	Turkestan	
REYNOUTRIA $x = 11$					
<i>japonica</i>	44	Sugiura 1936b	—	Japan	
ATRAPHAXIS $x = 11$? (Apomixis)					
<i>billardieri</i>	c. 45	Edman 1931	—	Greece, Syria	
<i>lanceolata (frutescens)</i>	c. 45	" "	H	C. Asia	
<i>spinosa</i>	c. 45	" "	—	S.W. Asia	
ANTIGONON $x = 7$					
<i>leptopus</i> Coral Vine	{ 40	Jaretsky 1928b			
	c. 44	Simmonds 1954	H	Mexico	
	48	Edman 1929			
	48	Rao 1936a			
COCCOLOBA $x = ?$					
<i>uvifera</i> Sea Grape	c. 80	Edman 1929	FHW	S.E.: U.S.A., W.I.	
<i>diversifolia</i>	c. 200	Jaretsky 1928b	H	S. Domingo	

58 ILLECEBRACEAE

ILLECEBRUM $x = 5$					
<i>verticillatum</i>	10	Reese 1952a	—	W. Eur., Medit.	

CORRIGIOLA $x = 8, 9$

<i>littoralis</i>	Sergena Root	{ 16 Sugiura 1937b 18 Blackburn, T. 1938 32 Rodrigues 1953	M	Eur., N. & E. Afr., W. Asia
-------------------	--------------	--	---	--------------------------------

HERNIARIA $x = 9$

<i>fruticosa</i>		18 Lorenzo-Andreu & G. 1950	—	W. Medit.
<i>glabra</i>		18 L. & L. 1944b	—	Eur., N. Asia
<i>ciliata</i>		72 Blackburn 1953	—	Guernsey
<i>marginata</i> v. <i>ciliata</i>		{ 108 " " 126 Rodrigues 1953	—	Portugal

PARONYCHIA $x = ?$

<i>argentea</i>		{ 28 Rodrigues 1953 36 Lorenzo-Andreu & G. 1950	—	Medit.
-----------------	--	---	---	--------

SCLERANTHUS $x = 11$

<i>annuus</i>	Knawel	{ 22 Rohweder 1939 44 Ehrenberg 1945	—	Eur., Temp. Asia
<i>perennis</i>		44 Blackburn, T. 1937	—	Eur., W. Asia

59 PHYTOLACCACEAE

PHYTOLACCA $x = 9$

<i>sessilifolia</i>		18 Sugiura 1936a	—	Mexico
<i>acinosa</i>	India Pokeberry	36 " "	MV	China, Himal.
<i>dioica</i>	Ombù	36 Schnack & C. 1947	HFoSh	S. America
<i>americana</i>	Pokeberry	36 Suzuka 1950	V	S: U.S.A.
<i>octandra</i>	Calalu	36 Sugiura 1936b	V	C. America

PETIVERIA $x = 9$

<i>alliacea</i>	Guinea-henweed	72 Sugiura 1937b	M	Brazil
-----------------	----------------	------------------	---	--------

RIVINA $x = 9$

<i>humilis</i>	Rouge Plant	108 Sugiura 1936b	H	Trop. Amer.
<i>tinctoria</i>		108 " 1940	D?	Peru

60 CYNOCRAMBACEAE (THELYGONACEAE)

THELYGONUM $x = 11$

<i>japonicum</i>		22 Sugiura 1937a	—	Japan
------------------	--	------------------	---	-------

61 CHENOPODIACEAE

CAMPHOROSMA $x = 6$

<i>annua</i>		12 Pólya 1948	—	E. Europe
--------------	--	---------------	---	-----------

SPINACIA $x = 6$

<i>oleracea</i>	Spinach	12 (24) Furusato 1940	V	cult, Afghan.
<i>tetranda</i>	Schamum	12 Lorz 1937	V	Caucasus
<i>turkestanica</i>		12 Dolcher 1949	—	Turkest., Pers., Afghan.

BASSIA (CHENOLEA)* $x = 9$

<i>hirsuta</i> & 2 spp.		18 Wulff 1936	—	Italy
-------------------------	--	---------------	---	-------

CORISPERMUM $x=9$				
<i>hyssopifolium</i>	18	Reese 1952a	—	N. Temp.
HABLITZIA $x=9$				
<i>tamnoides</i>	18	Wulff 1936	—	Caucasus
KOCHIA $x=9$				
<i>arenaria</i>	18	Wulff 1936	—	S. Eur., W. Asia
<i>scoparia</i> Summer Cypress	18	„ „	H	Eur., N. Asia
<i>trichophylla</i>	18	Witte 1947	—	China
MONOLEPIS $x=9$				
<i>chenopodioides</i>	18	Wulff 1936	—	W: N. Amer.
<i>trifida</i>	18	„ „	—	N. America
NITROPHILA $x=9$				
<i>australis</i>	18	Covas & S. 1947	—	Argentine
ATRIPLEX* $x=9$				
<i>halimus</i>	18	Castro & F. 1946	H	S. Europe
<i>hortensis</i> Orache	18	La Cour 1931	V	Cosmop.
<i>littoralis</i> Salt Bush & 3 spp.	18	Wulff 1937a	—	N. Temp.
<i>patula</i>	18	Witte 1947	—	Cosmop.
<i>semibaccata</i>	18	Kjellmark 1934	Fo	Australia
<i>hastata</i> Mountain O.	18, 36	Heiser & W. 1948	—	Eur., N. Asia
BETA $x=9$				
<i>macrocarpa</i>	18	Wulff 1936	V	Pers., Cauc.
<i>macrorhiza</i>	18	Sirotna 1936	V	Eur., N. Afr., S.W. Asia
<i>maritima</i> Sea Beet	18	Kachidze 1935	V	Eur., N. Afr.
<i>patula</i>	18	Wulff 1936	—	Madeira
<i>patellaris</i>	18	Bleier 1930	V	Teneriffe
<i>lomatogona</i>	{	18 Sirotna 1936	—	A. Min., Syria
		36 Müntzing 1937c	—	
<i>vulgaris</i> Beet, Mangold	18	Winge 1917	RSu	cult
	18 (19, 20, 27, 36, 42, 45)	Levan 1942b		
<i>v. cicla</i> Spinach Beet	18 (36)	Thomas 1945*	V	cult
<i>corolliflora</i>	36	Zossimovich 1939	V	Persia, A. Minor
<i>lom. × corolliflora</i>	27, 54	Zaikovskaja 1939	—	expt.
<i>trigyna</i>	54	Bleier 1928	R	Balk., A. Minor
CHENOPODIUM* $x=9$ (8?)				
<i>botrys</i>	16?	Kawatani & O. 1950	P	Cosmop.
<i>hybridum</i> Sowbane	{	18 Winge 1917	—	Eur., C. Asia,
		36 G. O. Cooper, 1935	—	N. Africa
<i>murale</i> & 1 sp.	18	Winge 1917	—	N. & S. Temp.
<i>virgatum</i> & 1 sp.	18	Wulff 1936	V	Japan
	18	Maude 1940		
<i>album</i> Fat Hen, Goosefoot	{	32? Kawatani & O. 1950	(G)V	N. Temp.
		36 G. O. Cooper 1935,		
		36 Witte 1947		
		54 Kjellmark 1934		
<i>ambrosioides</i>				
Wormseed, Mexican Tea	16, 32, 48?	Kawatani & O. 1950	BIV	Trop. Amer.
	32	Suzuka 1950		
	36	Kjellmark 1934		
	64	Suzuka & K. 1949		
<i>v. anthelminticum</i>	64	Kawatani & O. 1950		

CHENOPODIUM (cont.)

<i>bonus-henricus</i>	Good-King-Henry	{ 36 L. & L. 1944b 32? Kawatani & O. 1950	V	Europe
<i>quinoa</i>	Quinoa	{ 36 Kjellmark 1934 32? Kawatani & O. 1950	G	Peru, <i>cult</i>
<i>pueblense</i>	Cuahzontli	36 Reed 1950	Sp	Mexico

HALIMIONE (OBIONE) $x=9$

<i>pedunculata</i>		18 Wulff 1936	—	Eur., N. & S.W. Asia
<i>portulacoides</i>	Sea Purslane	36 " " Castro & F. 1946	—	Eur., Syria, N. Africa

SALICORNIA $x=9$

<i>perennis</i>		18 Hambler 1954	—	W. Eur., N. Afr.
<i>ramosissima</i>		18 " "	—	N. & W. Eur.
<i>stricta</i>	Glass Wort	{ 18 Castro & F. 1946 18, 36 König 1939 36+2B Maude 1939	V	Cosmop.
<i>(europaea, herbacea)</i>				
<i>dolichostachya</i>		36 Hambler 1954	—	W. Europe
<i>arabica</i>		c. 54 Castro & F. 1946	—	Eur., N. Afr.

SUEDA $x=9$

<i>splendens</i>		18 Castro & F. 1946	—	Medit., W. Asia
<i>fruticosa</i>		36 Joshi 1935	M	N. Temp.
<i>maritima</i>	Sea Blite	36 Wulff 1937a	V	N. & S. Temp.
<i>linearis</i>		54 Lorz 1937	—	N. Amer., Cuba

SALSOLA $x=9$

<i>soda</i>	Barilla Plant	{ 18 Castro & F. 1946 36 Wulff 1936	M	N. & S. Temp.
<i>kali</i>	Russian Thistle	36 " 1937a	M	" "
<i>tragus</i>		36 " 1936	—	" "

ARTHROCNEUM $x=9$

<i>glaucum</i>		36 Castro & F. 1946	—	Greece, India, Trop. Africa
----------------	--	---------------------	---	-----------------------------

BOUSSINGAULTIA $x=9$

<i>baselloides</i>		36 MacKenzie, T. 1937	—	Ecuador
--------------------	--	-----------------------	---	---------

EUROTIA $x=9$

<i>ceratoides</i>		36 Wulff 1936	H	Eur., N. Amer.
-------------------	--	---------------	---	----------------

OFAISTON $x=9$

<i>monandrum</i>		36 Wulff 1936	—	W. Asia
------------------	--	---------------	---	---------

63 AMARANTHACEAE

DIGERA $x=6$

<i>arvensis</i>		12 Puri & S. 1935	V	Trop. Afr. & Asia
-----------------	--	-------------------	---	-------------------

ACHYRANTHES $x=7$

<i>bidentata</i>		42 Sugiura 1936b	(G)M	Trop. Asia
------------------	--	------------------	------	------------

AMARANTHUS $x = 8, 17$

<i>albus</i>		32	Heiser & W. 1948	—	N. America
<i>edulis</i>		32	Covas 1950b	G?	Argentina
<i>gracizans</i>		32	Heiser & W. 1948	—	N. America
<i>hybridus</i>	Red Cockscomb	32	Covas & S. 1946	HM	cult, Tropics
<i>mangostanus</i>		32	Takagi 1933	V	India
<i>paniculatus</i>	Anardana	32	" "	GV	"
<i>retroflexus</i>	Red Root	c. 32	Heiser & W. 1948	V	Trop. Amer.
<i>caudatus</i>	Love-lies-bleeding	{ 32	Takagi 1933	GHMV	Tropics
		34	Cardenas & H. 1948		
<i>asplundii</i>		34	" "	—	Bolivia
<i>blitum</i>	Wild Amaranth	34	Takagi 1933	V	Temp. & Trop.
<i>gangeticus</i>	Lal sag	34	" "	HV	Tropics
<i>spinosus</i>	Spiny A.	34	" "	V	"
<i>viridis</i>	Green Calalu	34	Krishnaswamy & R. 1949	V	Temp. & Trop.

CELOSIA $x = 9$

<i>cristata</i>	Cockscomb	36	Grant 1954	HV	Tropics
<i>argentea</i>	Quail Grass	72	" "	V	"
<i>crist. × arg.</i>	51 (54, 81, 108)		" "	H	cult

GOMPHRENA $x = 9, 10$

<i>perennis</i>		18	Covas & C. 1946	—	Argentina
<i>pulchella</i>		18	" "	H	Brazil, Arg.
<i>martiana</i>		20	" "	—	Chile
<i>tomentosa</i>		30	" "	—	Brazil

64 BASELLACEAE

ULLUCUS $x = 12$

<i>tuberosus</i>	Ulluco	24, 36	Cárdenas & H. 1948	R	Andes
------------------	--------	--------	--------------------	---	-------

BASELLA $x = 12?$

<i>alba</i>	Malabar Nightshade	48	MacKenzie, T. 1937	V	Tropics
<i>rubra</i>	Indian Spinach	{ 44	Sugiura 1936a	V	"
		60	MacKenzie T 1937		

Group V

GERANIALES

65-71

HS

LYTHRALES

72-79

HST

THYMELAEALES

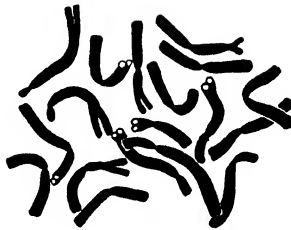
80-83

HST

PROTEALES

84

ST



Daphne mezereum

65 LINACEAE

LINUM * $x = 8, 9, 10, 12, 14, 15, 16$

$x = 8, 9$

<i>viscosum</i>	16	Ray 1944	H	S. Europe
<i>grandiflorum</i> Flowering F.	16	" " Masima '47	H	Algeria
	16, 17	Martzenitzina 1927		
	18	Kikuchi 1926		
<i>hirsutum</i>	16	Ray 1944	H	S.E. Eur., Asia M.
	18	Nagao 1941		
<i>catharticum</i>	16	Vilmorin & S. 1927b	M	Eur., S.W. Asia
	> 57	Martzenitzina 1927		

$x = 9$

<i>altaicum</i> & 8 spp.	18	Ray 1944	—	Siberia
<i>muelleri</i>	18	Kikuchi 1929	—	Sardinia
<i>perenne</i> Perennial F.	18	Ray 1944	H	Europe
<i>punctatum</i>	18	Martzenitzina 1927	—	Sicily
<i>austriacum</i> Austrian F.	18, 27	Freiburg 1933	H	Eur.—Persia
<i>alpinum</i>	18	Ray 1944	H	Eur., N. Afr.
	36	Nagao 1941		
<i>selaginoides</i>	36	Covas 1949b	—	Argentine
<i>suffruticosum</i>	72	Lorenzo-A. & G. '50	—	W. Medit.

<i>maritimum</i>	18	Nagao 1941	H	Medit.
	20	Vilmorin & S. '27b		
<i>campanulatum</i>	18, 28	Ray 1944	H	S. Europe
<i>narbonense</i> Narbonne F.	18	Kikuchi 1929	H	"
	28	Ray 1944		
<i>corymbiferum</i>	18	Martzenitzina 1927	—	N. Africa
	30	Kikuchi 1926		

$x = 10$

<i>gallicum</i>	20	Ray 1944	H	C. Eur., Medit.
-----------------	----	----------	---	-----------------

$x = 12, 14$

<i>capitatum</i>	24	Kikuchi 1926	H	S. Europe
	28	Ray 1944		
<i>arboreum</i>	28	" "	H	E. Medit.

$x = 15, 16$

<i>compactum</i>	30	Ray 1944	—	N. America
<i>medium</i>	30	" "	—	N.E.: N. Amer.
<i>nervosum</i>	30	Vilmorin & S. '27b	H	E. Europe
<i>rigidum</i>	30	Dillman 1933	—	W: N. Amer.
<i>sulcatum</i>	30	" "	—	N. America
<i>virginianum</i>	30	Ray 1944	—	E: N. Amer.

<i>africanum</i>	30	Masima 1947	—	N. Africa
	32	Sugiura 1940		
<i>bienne (angustifolium)</i>	32	Martzenitzina 1927	—	Eur., N. Afr.
	30, (60)	Masima 1947		
	28	Nagao 1941		
<i>flavum</i> Golden Flax	30	Ray 1944	H	S. Eur., Cauc.
	30-32	Martzenitzina 1927		
<i>usitatissimum</i> Flax, Linseed	30	Ray 1944	MOT	S.W. Asia, cult
	32	Kostoff 1940		

LINUM (cont.)

<i>as crepitans</i>					
<i>monogynum</i>					

RADIOLA	$x = 9$				
<i>linoides</i>	All-seed	18	Hagerup 1941b	—	Temp. Eurasia

REINWARDTIA	$x = 10$				
<i>trigyna</i>		20	Kishore 1951	H	N. India

66 ZYGOPHYLLACEAE

BALANITES	$x = 9$				
<i>egyptica</i>		18	Pathak <i>et al.</i> 1949	O	N. Afr., Arabia, Palestine

FAGONIA	$x = 9$				
<i>cretica</i>		18	Negodi 1939	H	W. Medit.

ZYGOPHYLLUM	$x = 11$				
<i>fabago</i>	Bean Caper	22	Warburg 1938	Sp	Spain, N. Africa W. Asia

PEGANUM	$x = 12$				
<i>harmala</i>	Turkey Red	24	Warburg 1938	D	C. Asia, Medit.

TRIBULUS	$x = 12$				
<i>terrestris</i>	Land Calthrops	{ 24	Negodi 1939		
		48	Schnack & C. 1947	M(V)	O.W. Tropics

BULNESIA	$x = 13$				
<i>retamo</i>		26	Schnack & C. 1947	—	Argentina

LARREA	$x = 13$				
<i>divaricata</i>		26	Covas & S. 1946	—	Argentina
<i>nitida</i>		26, 52	Covas 1949b	—	Arg., Chile
<i>cuneifolia</i>		52	Covas & S. 1946	—	Argentina
<i>tridentata</i>	Creosote Pl.	52, 104	Covas 1949b	HM	Mex., Texas

GUAIACUM	$x = ?$				
<i>officinale</i>	Lignum Vitae	c. 26	E.K.J.*	MReW	W. Indies, C. Am.

67 GERANIACEAE

PELARGONIUM *	$x = 8, 9, 10, 11$				
	$x = 8$				
<i>infundibulum?</i>		16	Gauger 1937	—	—
<i>odoratissimum</i>	Ger. Oil Pl.	16	Takagi 1928	HP	Trop. Africa
	$x = 9$				
<i>acetosum</i>		18	Gauger 1937	(V)	S. Africa
<i>hortorum</i>		18	Takagi 1928	H	cult
<i>inquinals</i>		18	" "	H	S. Africa

PELARGONIUM (cont.)

<i>lateripes</i>	18	Warburg 1938	H	S. Africa
<i>monstrum</i>	18	Gauger 1937	—	"
<i>scandens</i>	18	" "	H	"
<i>zonale</i> Zonal G.	17, 18, 35, 36	" "	H(V)	cult
<i>endlicherlanum</i>	36	Warburg 1938	—	Asia Minor
<i>pelatum</i> Ivy-leaved G.	36	Gauger 1937	H(V)	S. Africa
<i>glutinosum</i>	{ 36 90	" " Takagi 1928	—	"
<i>roseum</i> Rose G.	72 (144)	Schtschavinskaja '37b	HP	"
<i>radula</i>	81	Takagi 1928	H	"
<i>denticulatum</i>	90	" "	H	"
<i>graveolens</i>	90	" "	HP	"

<i>x = 10, 11</i>				
<i>roessingense</i>	20	Gauger 1937	—	"
<i>violaceum</i>	20	" "	—	"
<i>ardens</i> & 6 spp.	22	" "	H	"
<i>glaucifolium</i>	22	Warburg 1938	H	cult
<i>punctatum</i>	22	" "	H	S. Africa

<i>amabile</i>	40, 44	Gauger 1937	—	"
<i>flavum</i>	40, 44	" "	—	"
<i>tomentosum</i>	44	" "	H	"
<i>quercifolium</i> Oak-leaved G.	44, 88	" "	H	"
<i>triste</i>	60	" "	H(R)	"
<i>decipiens?</i>	88	" "	—	"
<i>vitifolium</i>	88	" "	H	"

ERODIUM* *x = 9, 10*

<i>absinthoides</i> v. <i>amanum</i>	18	Warburg 1938	H	Maced., Asia M.
<i>ciconium</i>	{ 18 20	Gauger 1937 Warburg 1938	H	Medit.
<i>corsicum</i>	{ 18 20	Negodi 1937 Warburg 1938	H	Corsica, Sard.
<i>sibthorplanum</i>	27	Gauger 1937	H	Maced., Asia M.
<i>chrysanthum</i>	36	Warburg 1938	H	Greece
<i>chamaedryoides</i> & 4 spp.	20	" "	H	Corsica
<i>glutinosum</i>	20	Andreas 1947	—	Medit.
<i>moschatum</i> Musk Clover	20	Gauger 1937	FoHP	Medit., S.W. Asia
<i>supracanum</i>	20	" "	H	Pyrenees
<i>texanum</i>	20	Baker unp.	—	W: N. Amer.
<i>cheilanthesifolium</i>	{ 20 40	Gauger 1937 Warburg 1938	H	Spain, Morocco
<i>botrys</i>	40	Heiser & W. 1948	—	Medit.
<i>chium</i> & 3 spp.	40	Warburg 1938	—	"
<i>cicutarium</i> Storksbill	40	Andreas 1947	FoH(V)	Medit., C. Asia
v. <i>immaculatum</i>	40	Baker unp.	—	N. Afr. (Calif.,
<i>obtusiplicatum</i>	40	"	—	nat.)

GERANIUM* *x = 9, 10, 11, 13, 16* *x*₁ = 23 (annual) *x* = 12, 14 *x*₂ = 25 (perennial)

<i>columbinum</i>	18	L. & L. 1944b	—	Eur., N. Asia
<i>lucidum</i>	20	Warburg 1938	H	" "
<i>dissectum</i>	22	L. & L. 1944b	HR	S. Europe
<i>pratense</i>	28	Warburg 1938	H	Eur., N. Asia
<i>sylvaticum</i> Wood Cranesbill	28	L. & L. 1944b	DH	" "

GERANIUM (cont.)

<i>molle</i>	26	Warburg 1938	H	Eur., N. & S.W. Asia
<i>rotundifolium</i>	26	" "	—	Eur., N. Asia
<i>endressii</i>	28	" "	H	Pyrenees
<i>pyrenaicum</i>	28	" "	H	Eur., Asia M.
<i>pusillum</i>	26	Jackson 1951	H	Eur., Cauc., Him.
<i>affine</i> & 18 sp.	28	Warburg 1938	—	Altai
<i>bohemicum</i>	28	Dahlgren 1952	H	C. Europe
<i>nepalense</i>	28	Suzuka 1950	H	Asia Mtns.
<i>platypetalum</i>	28, 42 (3x)	Warburg 1938	H	Caucasus
<i>palustre</i>	28, 56	Gauger 1937	H	Eur., N. Asia
<i>purpureum</i>	32	Bøcher 1947a	—	S. Eur., N. & E. Africa
<i>macrorrhizum</i>	{ 87-93	46 Warburg 1938	H	S. Europe
		48 Gauger 1937	—	S. Africa
<i>lanuginosum</i>	48	Dahlgren 1952	—	Abyssinia
<i>favosum</i>	50	Warburg 1938	—	Caucasus
<i>ibericum</i> & 2 spp.	56	" "	H	N. Temp.
<i>obertianum</i> Herb Robert	64	Bøcher 1947a	M	Can. Is., Madeira
<i>anemonifolium</i>	{ 128	68 Warburg 1938	H	Eur., Cauc.
		128 Jackson unp.	H	
<i>sanguineum</i>	84	Warburg 1938	H	

SARCOCAULON $x = 11$

<i>burmannii</i>	44	Gauger 1937	H	S. Africa
------------------	----	-------------	---	-----------

MONSONIA $x = 12$

<i>senegalensis</i>	24	Warburg 1938	—	Trop. Africa
---------------------	----	--------------	---	--------------

68 LIMNANTHACEAE

LIMNANTHES* $x = 10$

<i>alba</i>	10	Mason 1952	H	California
<i>douglasii</i> & 6 spp.	10	" "	H	"

69 OXALIDACEAE

OXALIS* $x = 5, 6, 7, 9, 11$

$x = 5$				
<i>bupleurifolia</i> Brazil Bush O.	10	Heitz 1927	H	Brazil
<i>caprina</i>	20	" "	H	S. Africa
<i>versicolor</i>	{ 14?	" "	H	"
		30 Yamashita 1935	H	"
<i>hirta</i>	30	" "	H	"
<i>pentaphylla</i>	30	" "	H	"
<i>rhombifolia</i>	c. 80	Heitz 1927	—	Venezuela
$x = 6$				
<i>corniculata</i> Creeping S.	24	Rutland 1941	HV	Cosmop.
<i>stricta</i> Yellow O.	24	Wulff 1937b	H	N. Temp.
$x = 7$				
<i>deppeii</i> Rosetta O. & 8 spp.	14	Heitz 1927	HRV	Mexico

OXALIS (cont.)

<i>origiesii</i>		14	Warburg 1938	H	Peru
<i>brasiliensis</i>		{ 14	Heitz 1927	H	Brazil
		28	Yamashita 1935		
<i>asinina</i>		28	Warburg 1938	H	S. Africa
<i>lasiandra</i> & 3 spp.		28	Heitz 1927	H	Mexico
<i>violacea</i>	Violet W. S.	28	Yamashita 1935	H(V)	U.S.A.
<i>cernua</i>	Bermuda Buttercup	35	" "	HV	S. Africa
<i>rubra</i>		42	Heitz 1927	H	Brazil
<i>truncatula</i>		42	" "	—	S. Africa
 <i>x</i> = 9, 11					
<i>valdiviensis</i>		18	Warburg 1938	H	Chile
<i>acetosella</i>	Wood Sorrel	22	Nakajima 1936	HMV	N. Temp.
<i>japonica</i>		44?	M. & S. 1935	—	Japan
<i>tuberosa</i>	Oka	{ 63-70	Kostoff <i>et al.</i> 1935	R	Andes
		66	Cárdenas & H. 1948		

AVERRHOA	<i>x</i> = 12				
<i>carambola</i>	Carambola	24	Krishnaswamy & R. 1949	F	India, China

70 TROPAEOLACEAE

TROPAEOLUM *x* = 6, 7

<i>peregrinum</i>	Canary Creeper	24	Warburg 1938	H	Peru
<i>majus</i>	Nasturtium	28	" "	H(V)	Peru, Brazil
<i>minus</i>	Dwarf N.	28	" "	H(V)	Peru
<i>peltophorum</i>		28	Sugiura 1931	H	Colombia, Ecuador
<i>tuberosum</i>	Per. N., Ysano	42	" 1936a, b	HR	Peru, Bolivia

71 BALSAMINACEAE

IMPATIENS* *x* = 7, 8, 9, 10

<i>x</i> = 7					
<i>amphorata</i>		14	Warburg 1938	H	W. Himalayas
<i>balfourii</i> & 2 spp.		14	Wulff, T. 1937	H	"
<i>balsamina</i>	Garden Balsam	14	Warburg 1938	H	Trop. Asia
<i>firmla</i>		14	Heitz & R. 1936	H	Madagascar
<i>scabrida</i>		14	F. H. Smith 1934	H	Himalayas
 <i>x</i> = 8					
<i>holstii</i>		16	Warburg 1938	H	E. Tr. Africa
<i>oliveri</i>		16	Wulff 1933	H	"
<i>petersiana</i>		16	" "	H	W. Tr. Africa
<i>sultani</i>		16	Warburg 1938	H	Zanzibar
 <i>x</i> = 9, 10, etc.					
<i>roylei</i>		{ 18	F. H. Smith 1934		
		18	W. Jackson unp.	H	Himalayas
		20	Warburg 1938		
<i>biflora</i>	Jewel Weed	20	F. H. Smith 1934	H	N. America
<i>noli-tangere</i>	Touch-me-not	20	Winge 1925	H	Eur., Siberia
<i>pallida (aurea)</i>		20	F. H. Smith 1934	H	E: N. America

IMPATIENS (cont.)

<i>parviflora</i>		{ 20 Schürhoff 1926 24 Wulff 1934a 26 Heitz & R. 1936	--	Turkestan, Siberia
-------------------	--	---	----	-----------------------

HYDROCERA $x=8$

<i>triflora</i>	Water	16	Schürhoff 1931	DH	Trop. Asia
<i>(angustifolia)</i>	Balsam				

72 LYTHRACEAE

PEPLIS $x=5$

<i>portula</i>	Water Purslane	10	Hagerup 1941b	V	Eur., W. As.
----------------	----------------	----	---------------	---	--------------

CUPHEA $x=6$

<i>cyanea</i>		12	Sugiura 1937b	—	Mexico
<i>lanceolata</i>		12	" "	—	"
<i>miniata</i>	Cigar Flower	18	" 1936b	H	"
<i>platicentra</i>		36	" "	—	"

LYTHRUM $x=15$

<i>hyssopifolia</i>		20?	Tischler 1929	H	Temp.
<i>virgatum</i>		30	La Cour 1945*	H	Eur., N. Asia
		30	Shinke 1929		
<i>salicaria</i>		50	L. & L. 1942	H	N. Temp.
		60	La Cour 1945*		
<i>myrtifolium</i>		60	" "	—	N. America

NESAEA (LYTHRUM, DECODON) $x=15$

<i>triflorum</i>		60	La Cour 1945*	H	S. America
------------------	--	----	---------------	---	------------

LAGERSTROEMIA $x=11, 25$

<i>flos-reginae</i>	Murata	44	Tjio 1948	HW	India
<i>indica</i>	Grape Myrtle	50	Bowden 1945a	H	S. Asia, N. Austr.
<i>speciosa</i>		50	" "	H	Trop. Asia

75 PUNICACEAE

PUNICA $x=8, 9?$

<i>granatum</i>	Pomegranate	{ 16 Tjio 1948 18, 19 Kostoff <i>et al.</i> 1935 18 Proos 1938	DFHM	cult (Persia)
-----------------	-------------	--	------	---------------

77 ONAGRACEAE (OENOTHERACEAE)

CLARKIA (incl. GODETIA) $x=5, 7, 8, 9. x_2=12, 17. x_3=26$

<i>virgata</i>		10	Lewis 1953b	H	California
<i>amoena</i>		14	" "	H	N.W.: U.S.A.
<i>arcuata</i>		14	" "	H	California
<i>breweri</i>		14	" "	H	"
<i>concinna</i>		14	" "	H	"
<i>lassenensis</i>		14	" "	H	N.W.: U.S.A.

CLARKIA* (cont.)

<i>mildrediae</i>	14	Lewis 1953b	H	California
<i>rubicunda</i>	14	" "	H	"
<i>gracilis</i> (as <i>G. nutans</i>)	28+0-4B	Håkansson 1945	H	N.W: U.S.A.

$x = 8$

<i>biloba</i>	16	Lewis 1953a	H	California
<i>imbricata</i>	16	Lewis & L. 1953	H	"
<i>modesta</i>	16	Lewis 1953b	—	"

$x = 9$

<i>bottae</i>	18	" "	H	"
<i>cylindrica</i>	18	" "	H	"
<i>deflexa</i>	18	" "	H	"
<i>dudleyana</i>	18	" "	H	"
<i>epilobioides</i>	18	" "	—	Calif., Arizona
<i>lingulata</i>	18	" 1953a	H	California
<i>speciosa</i>	18	" 1953b	H	"
<i>unguiculata</i> (<i>elegans</i>)	18+0-6B	" 1951	H	"
<i>williamsonii</i>	18	" 1953b	H	"
as <i>G. viminea</i>	18+0-3B	Håkansson 1949	H	"
<i>xantiana</i>	18	Lewis 1953b	H	"
<i>delicata</i>	36	" unp.	H	"

$x_1 = (5 + 7)$

<i>pulchella</i>	24	Håkansson 1931	H	N.W: U.S.A.
<i>rhomboidea</i>	24	Lewis 1951	H	W: N. America

$x_2 = (8 + 9)$

<i>davyi</i>	34	Lewis & L. 1953	—	California
<i>similis</i>	34	Lewis & E. 1953	—	"
<i>tenella</i>	34	Hiorth 1941	H	Chile, Argentina

$x_3 = (9 + 17)$

<i>affinis</i>	52	Lewis & L. 1953	—	California
<i>prostrata</i>	52	" "	H	"
<i>purpurea</i>	52	" "	H	W: N. America

ANOGR (OENOTHERA) $x = 7$

<i>pallida</i>	14	Johansen 1931d	HW	W: U.S.A.
<i>trichocalyx</i>	14	" 1929c	H	"

OENOTHERA* $x = 7$

<i>biennis</i> & 24 other spp.	14	Darlington 1931b	HR	E: N. America
	14	Cleland <i>et al.</i> 1950		N. America
<i>lamarckiana</i> Evening Primrose	14 (21, 28)	Darlington 1931b	H	Europe
<i>organensis</i>	14	Emerson 1938	—	N. America
<i>rosea</i>	14	Schwemmle 1924	H	Texas—Peru
<i>tetragona fraseri</i> (<i>glauca</i>)	28	" "	H	E: N. America
<i>perennis</i> (<i>pumila</i>)	28	Valcanover 1927	H	" "

TARAXIA (OENOTHERA) $x = 7$

<i>heteranthera</i>	14	Johansen 1929c	H	W: U.S.A.
<i>ovata</i> Golden Eggs	14	" 1931a	H	California

GAURA $x = 7, 9$

<i>biennis</i>	14	Bhaduri 1942	H	N. America
----------------	----	--------------	---	------------

GAURA (cont.)					
<i>coccinea</i>	14	Johansen 1929c	H	C: N. America	
<i>lindheimeri</i>	14	Bhaduri 1941	H	Texas, Louisiana	
	18	Suzuka & K. 1949			
JUSSIEUA <i>x</i> = 8					
<i>repens</i> Primrose Willow	16	Sinoto 1928b	DM	Tropics	
CIRCAEA * <i>x</i> = 11					
<i>alpina</i>	22	L. & L. 1944b	—	N. Temp.	
<i>lutetiana</i> & 1 sp. Enchanter's Nightshade	22	Uddling 1929	—	Europe	
GAYOPHYTUM <i>x</i> = 11					
<i>ramosissimum</i>	22	Johansen 1933a	—	W: N. America	
LOPEZIA <i>x</i> = 11					
<i>coronata</i>	22	Täckholm 1914	H	Mexico	
FUCHSIA <i>x</i> = 11					
<i>arborescens</i>	22	Haque 1952	H	Mexico	
<i>boliviana</i>	22	Warth 1925	H	Bolivia	
<i>colensoi</i>	22	" "	H	New Zealand	
<i>cordifolia</i>	22	Haque 1952	H	Mexico	
<i>corymbiflora</i>	22	Warth 1925	H	Peru	
<i>fulgens</i>	22	" "	H	Mexico	
<i>microphylla</i>	22	Haque 1952	H	"	
<i>procumbens</i>	22	Johansen 1929c	H	New Zealand	
<i>serratifolia</i>	22	Warth 1925	H	Peru	
<i>splendens</i>	22	" "	H	Mexico	
<i>magellanica</i> (macrostemma)	22, 44	Johansen 1929c	H	Peru, Chile	
<i>v. gracilis</i>	44	Haque 1952			
<i>triphylla</i> (3x)	33	Warth 1925	H	W. Indies	
<i>coccinea</i>	44	" "	H	Brazil	
<i>lycioides</i> (rosea)	44	" "	H	Chile	
Garden forms	22, 55, 66, 77	Haque 1952	H	<i>cult</i>	
ZAUSCHNERIA <i>x</i> = 15					
<i>cana</i> (microphylla)	30	Clausen <i>et al.</i> 1940	H	California	
<i>garrettii</i>	30	" " "	—	"	
<i>septentrionalis</i>	30	" " "	—	"	
<i>latifolia</i>	60	" " "	—	"	
<i>californica</i> Calif. Fuchsia	60	" " "	H	"	
<i>v. angustifolia</i>	60, c. 75	" " "			
CHAMAENERION (EPILOBIUM) <i>x</i> = 18					
<i>angustifolium</i> Rosebay	36	L. & L. 1948	H	N. Hemisphere	
Willow-herb					
<i>latifolium</i>	72	" "	—	Sib., N.W. Amer.	
EPILOBIUM* <i>x</i> = 18					
<i>anagallidifolium</i> (alpinum)	36	Bøcher & L. 1950	H	N. Hemisphere	
<i>hirsutum</i> Codlins and Cream	36	L. & L. 1942	H	Europe	
<i>palustre</i> Marsh W. H.	36	" 1948	—	N. Hemisphere	
<i>pedunculare</i> & 19 spp.	36	Hair 1942	—	New Zealand	
TRAPA <i>x</i> = ?					
<i>natans</i> Water Chestnut	c. 36	Palmgren 1943	N	Eur., Asia	

78 HALORAGACEAE

MYRIOPHYLLUM $x = 7$

<i>exalbescens</i>	14	Löve 1954	—	N. America
<i>alterniflorum</i>	14	Scheerer 1939	—	Eur., Greenland
<i>verticillatum</i> Water Milfoil	28	„ 1940	H	N: N. Amer., Eur., Asia
<i>spicatum</i>	28	Löve 1954	—	Eurasia

GUNNERA $x = ?$

<i>chilensis</i>	c. 24	Winge 1917	H	Andes
------------------	-------	------------	---	-------

HIPPURIS $x = (8) 16$

<i>vulgaris</i> Mare's Tail	32	Winge 1917	—	N. Temp., Patag.
	32	L. & L. 1948		

79 CALLITRICHACEAE

CALLITRICHE $x = 3, 5$

<i>autumnalis</i> Aut. Starwort	6	Jørgensen 1923	—	N. Eur., Iceland
(<i>hermaphroditica</i>)				
<i>truncata</i>	6	Dodds, T. 1937	—	W. & S. Europe
<i>polymorpha</i>	12	L. & L. 1948	—	N. & C. Eur., Cauc., Sib.
<i>stagnalis</i>	10, 20	Jørgensen 1923	—	S. Eur., N. Afr.
<i>verna</i>	20	Sokolovskaja 1932	—	Eur., Sib., N. Afr., N. Amer.
<i>intermedia</i> (<i>hamulata</i>)	38	Schotsman 1954	—	Eur., Cauc., Palest., Mor.

81 THYMELAEACEAE

DAPHNE $x = 9$

<i>alpina</i> Alpine D.	18	Strasburger 1909	H	S. & C. Europe
<i>bholua</i> Nepal Paper Pl.	18	Venkateswarlu 1946	T	India
(<i>cannabinata</i>)				
<i>cneorum</i> Garland Fl.	18	Fuchs 1938	H	S. & C. Europe
<i>kiusana</i>	18	Osawa 1913	H	Japan
<i>laureola</i> Spurge Laurel	18	Fuchs 1938	H	C., S. & W. Eur., W. Asia
<i>mezereum</i> February D.	18	Maude 1940	HM	Eur., N. Asia
<i>yezoensis</i>	18	M. & S. 1935	—	Japan
<i>glomerata</i>	18	S. & S. 1940	H	Cauc.
<i>odora</i> Winter D.	{ 28 30	Takenaka 1931 Yamaha, K. 1931	HP	China, Japan

WIKSTROEMIA $x = 9$ (Polyploids Apomictic)

<i>canescens</i> Paper Bark T.	18	Venkateswarlu 1946	T	Him., China, Cey.
<i>viridiflora</i> Philippine P.B.T.	{ 27 52?	Fagerlind 1940 Winkler 1906	T	S.E. Asia

EDGEWORTHIA $x = 9$

<i>papyrifera</i> Paper Bush	36	Sugiura 1936a	HT	China, Jap., Him.
------------------------------	----	---------------	----	-------------------

PIMELEA* $x = 9$

<i>cinerea</i> & 10 spp.	36	Cruickshank 1953	H	Australia
<i>humilis</i>	72	" "	H	Austr., Tasm.
<i>lindleyana</i>	90	" "	H	Tasmania
<i>drupacea</i>	108	" "	H	Vict., Tasm.

83 NYCTAGINACEAE

BOUGAINVILLEA $x = 17$

<i>glabra</i>	20	D. C. Cooper 1931	H	Brazil
garden forms	34	Wilson 1947	H	<i>cult</i>
<i>spectabilis</i>	—		H	Brazil
garden forms	34	" "	H	<i>cult</i>

MIRABILIS $x = 29$

<i>jalapa</i>	58	Showalter 1935	HM	Trop. Amer.
<i>longiflora</i>	58	" "	—	Mexico
<i>multiflora</i>	58	" "	H	"

OXYBAPHUS (ALLIONIA) $x = 29$

<i>nyctagineus</i>	58	Bowden 1945b	H	S: U.S.A.
<i>viscosus</i>	58	" "	—	Peru

84 PROTEACEAE

PERSOONIA* $x = 7$

<i>ferruginea</i>	14	H. P. Lancaster unpub.	H	N.S.W.
<i>lanceolata</i>	14	" "	H	"
<i>linearis</i> & 7 spp	14	" "	H	" Vict.

BANKSIA $x = 7$

<i>ericifolia</i>	28	H. P. Lancaster unpub.	H	Australia
<i>integrifolia</i>	28	" "	H	"
<i>latifolia</i>	28	" "	H	"
<i>serrata</i>	28	" "	H	"
<i>spinulosa</i>	28	" "	H	"

BRABEUM $x = 7$

<i>stellatifolium</i>	28	de Vos 1943	—	S. Africa
-----------------------	----	-------------	---	-----------

CENARRHENES $x = 7$

<i>nitida</i>	28	H. P. Lancaster unpub.	—	Australia
---------------	----	------------------------	---	-----------

DRYANDRA $x = 7$

<i>floribunda</i>	28	H. P. Lancaster unpub.	H	W. Australia
-------------------	----	------------------------	---	--------------

LAMBERTIA $x = 7$

<i>formosa</i>	28	H. P. Lancaster unpub.	H	W. Australia
----------------	----	------------------------	---	--------------

MACADAMIA $x = 7$

<i>ternifolia</i> Queensland Nut	28 (56)	Urata unpub.	HN	Queensland
----------------------------------	---------	--------------	----	------------

XYLOMELUM $x = 7$

<i>pyriforme</i>	28	H. P. Lancaster unpub.	H	N.S.W.
------------------	----	------------------------	---	--------

GREVILLEA* $x = 10$				
<i>banksii</i>	20	H. P. Lancaster unpub.	H	Queensland
<i>glabrata</i>	20	" "	H	W. Australia
<i>robusta</i>	20	" "	HSh	N.S.W.
& 22 spp.	20	" "	H	Australia
HAKEA $x = 10$				
<i>acicularis</i>	20	H. P. Lancaster unpub.	H	Austr., Tasm.
<i>dactyloides</i>	20	" "	H	W. Australia
SYMPHYONEMA $x = 10$				
<i>montanum</i>	20	H. P. Lancaster unpub.	—	Australia
<i>paludosum</i>	20	" "	—	"
AULAX* $x = 11$				
<i>cneorifolia</i> & 2 spp.	22	de Vos 1943	H	S. Africa
CONOSPERMUM $x = 11$				
<i>ericifolium</i>	22	H. P. Lancaster unpub.	H	N.S.W.
<i>longifolium</i>	22	" "	H	"
LOMATIA $x = 11$				
<i>silaiifolia</i>	22	H. P. Lancaster unpub.	H	E. Australia
STENOCARPUS $x = 11$				
<i>sinuatus</i>	22	H. P. Lancaster unpub.	H	E. Australia
TELOPEA $x = 11$				
<i>speciosissima</i> Waratah	22	H. P. Lancaster unpub.	H	N.S.W.
LEUCOSPERMUM* $x = 12$				
<i>reflexum</i> & 3 spp.	24	de Vos 1943	H	S. Africa
MIMETES $x = 12$				
<i>lyrigera</i>	24	de Vos 1943	—	S. Africa
PARANOMUS $x = 12$				
<i>spicatus</i>	24	de Vos 1943	H	S. Africa
PROTEA* $x = 12$				
<i>grandiflora</i> & 9 spp.	24	de Vos 1943	H	S. Africa
SERRURIA $x = 12$				
<i>artemisiifolia</i>	24	de Vos 1943	H	S. Africa
LEUCADENDRON $x = 13$				
<i>plumosum</i>	26	de Vos 1943	H	S. Africa
<i>argenteum</i> Silver Tree	26-28	" "	HSh	"
ISOPOGON $x = 13$				
<i>anethifolius</i>	26	H. P. Lancaster unpub.	—	Australia
PETROPHILA $x = 13$				
<i>pulchella</i>	26	H. P. Lancaster unpub.	H	Australia

Group VI

DILLENIALES

85, 86
(H)ST

PITTOSPORALES

88-90
(H)ST

TAMARICALES

97-99
HST

CUCURBITALES

103-106
H(S)

CORIARIALES

87
S

BIXALES

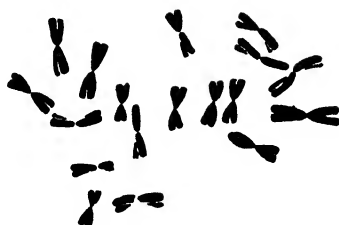
91-96
HST

PASSIFLORALES

100-102
HST

CACTALES

107
HS



Cistus corbariensis

85 DILLENIACEAE

HIBBERTIA	$x = 8$				
<i>diffusa</i>		16	A. T. Hotchkiss unpub.	—	E. Australia
<i>scandens (volubilis)</i>		16	" "	H	"
<i>linearis</i>		16, 32	" "	—	"
<i>amplexicaulis</i>		32	" "	—	W. Australia
<i>saligna</i>		c. 64	" "	—	E. Australia

DILLENIA	$x = 8$				
<i>ovata</i>		32	Tixier 1953	—	Viet-Nam

WORMIA	$x = 13$				
<i>suffruticosa</i>	Marsh Simpoh	26	Paetow 1931	H	Malaya

87 CORIARIACEAE

CORIARIA	$x = ?$				
<i>myrtifolia</i>		c. 80	Bowden 1940a	H	S. Eur., N.W. Afr.

88 PITTOSPORACEAE

PITTOSPORUM	$x = 12$				
<i>tobira</i>	Japanese P.	24	Schürhoff 1929a	H	Jap., China

91 BIXACEAE

BIXA	$x = 7, 8$				
<i>orellana</i>	Annatto	{ 14	EKJ*	D	S. America
		16	Simmonds 1954		

93 FLACOURTIACEAE

FLACOURTIA	$x = 11$				
<i>ramontchi</i>	Uguessa	22	Bhaduri & K. 1949	FH	India, Malaya
<i>sepiaria</i>		{ 22	" "	FH	" "
		22	Tjio 1948		

IDESIA	$x = 11?$				
<i>polycarpa</i>		c. 44	Corti 1948	H	China, Japan

HYDNOCARPUS	$x = 11, 12$				
<i>ilicifolia</i>		22	EKJ*	MW	Mal., Camb. Java
<i>anthelminthica</i>	Ch. Chaulmoogra	24	"	MW	Indo-China
<i>laurifolia</i>	Marotti Oil	48	Hamacher 1947	M	S. India

95 CANELLACEAE

CAPSICODENDRON	$x = 13$				
<i>dinisii</i>		26	Occhioni 1945	—	Brazil

96 CISTACEAE

HELIANTHEMUM* $x = 5, 11$

<i>squamatum</i>	10	Coutinho & L.-A. '48	—	W. Medit.
<i>apenninum</i>	20	Proctor 1955	H	W. & S. Europe,
as <i>polifolium</i> , <i>pulverulentum</i>	20	Bowden 1940a		Asia Minor
<i>glaucom</i>	20	" "	H	Medit.
<i>ledifolium</i>	20	Proctor 1955	H	"
<i>kahiricum</i> & 3 spp.	20	Atsmon unp.	H	N. Afr., S.W. As.
<i>chamaecistus</i> Rock Rose	20	Proctor 1955	H	Eur., S.W. Asia
as <i>vulgare</i>	32?	Bowden 1940a		
<i>alpestre</i>	20	" "	H	S. Eur. Mtns.,
	22	Proctor 1955		Asia Minor
<i>nummularium</i> (<i>paniculatum</i>)	20	Lorenzo-Andreu 1951	H	W. Medit.
	22	Coutinho & L.A. '48		
<i>canum</i>	22	Proctor 1955	H	W. & S. Eur.,
				S.W. Asia
<i>lunulatum</i>	22	" "	H	Italy
<i>oelandicum</i>	22	" "	H	Arctic, N. Eng.

CROCANTHEMUM (HELIANTHEMUM) $x = (5) 10$

<i>canadense</i>	20	Bowden 1940a	H	N.E: U.S.A.
------------------	----	--------------	---	-------------

TUBERARIA (HELIANTHEMUM) $x = 6, 7$

<i>vulgaris</i>	14	Proctor 1955	H	W. Medit.
<i>guttata</i>	36	" "	H	W. Eur., Medit.
	48	Chiarugi 1925		

FUMANA (HELIANTHEMUM) $x = 8$

<i>arabica</i>	32	Atsmon unp.	—	Medit., Pers.
<i>laevipes</i>	32	Proctor 1955	H	W. Medit.
<i>thymifolia</i>	2	" "	—	Medit., Pers.

HALIMIUM $x = 9$

<i>atriplicifolium</i>	18	Chiarugi 1925	H	Spain
<i>halimifolium</i>	18	Proctor 1955	H	W. Medit.
<i>lasianthum</i>	18	Snoad unp.	H	S. Spain, Port.
<i>libanotis</i>	18	Rodrigues 1950	H	W. Medit.
<i>ocymoides</i>	18	Proctor 1955	H	Iber. Penin.
<i>umbellatum</i>	18	" "	H	W. Eur., Medit.

CISTUS $x = 9$

<i>albidus</i> Rock Rose	18	Bowden 1945a	H	Medit.
<i>crispus</i>	18	Dansereau 1940	H	S.W. Europe
<i>heterophyllus</i>	18	" "	—	Algeria
<i>hirsutus</i>	18	La Cour 1945*	H	Iber. Penin.
<i>ladaniferus</i> Ladanum Pl.	18	Chiarugi 1937	HMP	S.W. Europe
<i>laurifolius</i>	18	Bowden 1945a	H	Medit.
<i>monspeliensis</i>	18	La Cour 1945*	H	S. Europe
<i>parviflorus</i>	18	Dansereau 1940	H	E. Medit.
<i>populifolius</i>	18	Chiarugi 1937	M	W. Medit.
<i>rosmarinifolius</i>	18	La Cour 1945*	H	"
<i>salvifolius</i>	18	Dansereau 1940	H	Medit.
<i>symphitifolius</i>	18	Chiarugi 1937	M	Teneriffe
<i>villosus</i> Cretan R. R.	18	" 1925	H	Medit.
<i>varius</i> (<i>crisp.</i> \times <i>monspel.</i>)	18	Snoad unp.	H	Algeria, France
<i>corbariensis</i> (<i>popul.</i> \times <i>salv.</i>)	18	La Cour 1945*	H	Medit.

CISTUS (cont.)

<i>florentinus</i> (monspel. \times salv.)	18	Snoad unp.	H	Medit.
<i>purpureus</i> (ladanif. \times vill.)	18	„ „	H	cult

HALIMIOCISTUS (HALIMIUM \times CISTUS) $x = 9$

<i>ingwersenii</i>	18	Snoad unp.	H	cult
<i>sahucii</i>	18	„ „	H	France, cult

97 FRANKENIACEAE

FRANKENIA $x = 5?$

<i>pulverulenta</i>	20	Sugiura 1937b	H	Med., Ind., S. Afr.
<i>hirsuta</i>	30	Castro & F. 1946	—	Eur., S.W. Asia, S. Africa

98 TAMARICACEAE

TAMARIX* $x = 12$

<i>aphylla</i> (articalata)	Thaia,	24	Bowden 1945b	SuTW	W. Asia
	Athel T.				
<i>ericoides</i>		24	Sharma 1939	T	India
<i>gallica</i>	Tamarisk & 4 spp.	24	Bowden 1940a	HSbT	Eur., N. Afr.

MYRICARIA $x = 12$

<i>germanica</i>	False Tamarisk	24	Frisendahl 1912	H	N. Temp.
------------------	----------------	----	-----------------	---	----------

99 FOUQUIERACEAE

FOUQUIERA $x = 8$

<i>burragei</i>		16	Johansen 1936	—	N. America
<i>peninsularis</i>		16	„ „	—	California
<i>splendens</i>	Ocotillo	16	„ „	HO	S.W: U.S.A.

101 PASSIFLORACEAE

PASSIFLORA (TACSONIA) $x = 5, 9, 10$

$x = 6$					
<i>bryonoides</i>		12	Bowden 1945b	—	Mexico
<i>capsularis</i>		12	„ „	H	Trop. Amer.
<i>pulchella</i>		12	Storey 1950	—	Venezuela
<i>suberosa</i>		24, 36	„ „	FH	Trop. S. Amer.
<i>lutea</i>	Yellow P. Fl.	84	Bowden 1945b	FH	W. Indies

$x = 9$					
<i>caerulea</i>	Blue Crown P. Fl.	18	Nakajima 1931	FH	Brazil
<i>edulis</i>	Passion Fruit	18	Storey 1950, EKJ*	F	Trop. S. Amer.
<i>incarnata</i>	May Pop	18	„ „	FH	S.E: U.S.A.
<i>laurifolia</i>	Water Lemon	18	„ „	FH	Trop. Amer.
<i>ligularis</i>	Sweet Gr.	18	„ „	FH	Peru
<i>maliformis</i>	Sweet Calabash	18	„ „	FH	Trop. Amer.
<i>manicata</i>		18	„ „	H	Peru, Colo., Venez.

PASSIFLORA (cont.)

<i>mixta</i>		18	La Cour 1952	H	Andes
<i>mollissima</i>		18	Storey 1950	H	"
<i>quadrangularis</i>	Giant	18	" " EKJ*	FH	Trop. Amer.
	Granadilla				
<i>seemannii</i>		18	" "	—	C. America
<i>subpeltata</i>		18	" "	H	Mex.—Venez.
<i>vitifolia</i>		18	" "	H	C. America
<i>allardii</i>		18	La Cour 1951b	H	cult
(caerulea × quadrangularis)					

x = 9, 10

<i>gracilis</i>		18	La Cour 1952	H	Venezuela
		20	Bowden 1945b		
		18	EKJ*	FHM	Trop. S. Amer.
<i>foetida</i>	Wild P. Fr.	20	Storey 1950		O.W. Tropics, nat.
		20	Nishiyama & K. 1942		
		22	Bowden 1945b		
<i>v. gossypifolia</i>		20	Storey 1950		

103 CUCURBITACEAE

CUCUMIS x = 7, 12

x = 7					
<i>sativus</i>	Cucumber	14	Heimlich 1927	(M)V	cult, India
		(28)	Shifriss 1942		
<i>trigonus</i>	Jackal's C.	14	EKJ*	M	India, Turkest.
x = 12					
<i>agrestis</i>	Wild Melon	24	Araratian 1939	F	Armenia
<i>chinensis</i>		24	" "	F	China
<i>microcarpus</i>		24	" "	—	Armenia
<i>anguria</i>	W.I. Gherkin	24	Kozhuchow 1930	V	Trop. Amer.
<i>dipsaceus</i>	Teasel Gourd	24	" "	V	Trop. Afr., Ar.
<i>flexuosus</i>	Snake C.	24	" "	V	Tropics
<i>lyratus</i>		24	" "	V	Tanganyika
<i>melo</i>	Melon	24	Yamaha & S. 1936	NVF	cult, Afgh.
	Cantaloupe	(48)	Shifriss 1941		
<i>metuliferus</i>	Horned C.	24	Kozhuchow 1930	V	S. Africa
<i>myriocarpus</i>	Gooseberry G.	24	" "	V	"
<i>odoratissimus</i>		24	" "	F	Tropics
<i>prophetaurum</i>	Globe Cucumber	24	" "	V	Ar., Tr. Afr.
<i>sacleuxi</i>		24	" "	V	Zanzibar

ACTINOSTEMMA x = 8

<i>lobatum</i>		16	Kurita 1939	—	Japan
----------------	--	----	-------------	---	-------

CYCLANTHERA x = 8

<i>explodens</i>		32	Resende 1937	—	Ecuador
<i>pedata</i>		32	" "	—	Mexico

ECHINOCYSTIS (MICRAMPELIS) x = 8

<i>fabacea</i>		32	McKay 1931	V	California
<i>oregona</i>		32	" "	—	W: N. America
<i>macrocarpa</i>		{ 32	" "	—	California
		{ 64	Whitaker 1950		

THLADIANTHA $x = 9$					
<i>dubia</i>		18	Kozhuchow 1934	V	China
BRYONIA $x = 10$					
<i>alba</i>	White Bryony	20	Brabec 1954	M	W. Medit.
<i>dioica</i>	Red Bryony	20	„ „	M	Eur., Medit.
CITRULLUS $x = 11$					
<i>colocynthis</i>	Colocynth	22	Whitaker 1933b	M	Africa
<i>vulgaris</i>	Water Melon	22	Kozhuchow 1925	FN	Trop. Africa
GYMNOPETALUM $x = 11$					
<i>cochinchinense</i>		22	Islam & S. 1951	—	Trop. Asia
LAGENARIA $x = 11$					
<i>vulgaris</i>	Bottle Gourd or Calabash	22 (44)	McKay 1931 Sinnott <i>et al.</i> 1939	V	<i>cult</i> , Afgh.
MOMORDICA $x = 11, 14$					
<i>balsamina</i>	Balsam Apple	22	McKay 1931	MV	Tropics
<i>charantia</i>	Bitter Gourd	22	Yamaha & S. 1936	VVit	„
<i>dioica</i>		28	Richharia & G. 1953	V	India
TRICHOSANTHES $x = 11$					
<i>anguina</i>	Snake Gourd	22	McKay 1931	V	Trop. Asia
<i>dioica</i>	Patol	22	Bhaduri & B. 1947	V	India
<i>japonica</i>		22	Sinoto 1929	V	Trop. Asia
<i>multiloba</i>		22	Kurita 1939	—	Japan
		(σ , 20 + XY)			
<i>shikokiana</i>		22	Kurita 1939	—	„
<i>cucumeroides</i>		{ 44	„ „	V	„
		44	Yamaha & S. 1936		
<i>palmata</i>		44	Rangaswami 1949	—	Trop. Asia
MELOTHRIA $x = 11, 12$					
<i>japonica</i>		22	Nakajima 1931	V	Japan
<i>maderaspatana</i>		22+0-2B	Kumar & V. 1951		Trop. As. & Afr.
<i>leiosperma</i>		24	„ „		India
<i>punctata (abyssinica)</i>		24	McKay 1931	V	S. Africa
<i>scabra</i>		24	Kozhuchow 1934	V	Mexico
<i>heterophylla</i>		48	Kumar & V. 1951		Trop. Asia
<i>perpusilla</i>		48	„ „		India, Malaya
CUCURBITA $x = 10, 12$					
<i>maxima</i>	Winter or Turban Squash	{ 24	Rau 1929	OV	Peru, <i>cult</i>
		40	Pearson <i>et al.</i> 1951		
<i>moschata</i>	Pumpkin, Cushaw or Toonai	{ 24	Yamaha & S. 1936	V	Mexico, <i>cul</i>
		40	Ruttle 1931b		
		40	Pearson <i>et al.</i> 1951		
<i>pepo</i>	Summer Squash or Vegetable Marrow	{ 48	Kozhuchow 1925	OMV	S.W. Asia <i>cult</i>
		40	Erwin & H. 1930		
		40	Castetter 1930		
		(80)	EKJ*		
<i>v. pomiformis</i>		40	Kozhuchow 1925		
<i>v. citrullina</i>		42	„ „		
<i>andreana</i>		40	Covas & S. 1946	V	Uruguay

CUCURBITA (cont.)

<i>digitata</i>		40	McKay 1931	V	N. Mexico
<i>ficifolia</i>	Malabar Gourd	40	" "	V	E. Asia
<i>foetidissima</i>	Calabazilla	40	" "	V	Mexico
<i>palmata</i>		40	" "	V	California

IBERVILLEA (MAXIMOWICZIA) $x = 11, 12$

<i>lindheimeri</i>		22	MacKay 1930	—	Texas
sp.		24	" "	—	—

BENINCASA $x = 12$

<i>hispida</i>	Wax or White	{ 24	Resende 1937	MV	Trop. Asia
(<i>cerifera</i>)	Gourd		Whitaker 1933b		

COCCINIA (CEPHALANDRA) $x = 12$

<i>hirtella</i>		24	McKay 1930	V	S. Africa
<i>indica</i>	Ivy Gourd	24	Chakravorti 1948	FV	Trop Asia
(<i>cordifolia</i>)		24	Kumar & V. 1952		
		(♂ 22 + XY, ♀ 22 + XX)			
(3x)		36	Kumar & V. 1952		
		(♂ 33 + XXY)			

ECBALLIUM $x = 12$

<i>elaterium</i>	Squirting C.	24	Mackay 1930	H	Medit.
------------------	--------------	----	-------------	---	--------

SECHIUM $x = 12$

<i>edule</i>	Chayote, Chocho	24	Sugiura 1930	HVT	W. Indies
--------------	-----------------	----	--------------	-----	-----------

SICYOS $x = 12$

<i>angulatus</i>	Bur Cucumber	24	Kozhuchow 1934	HV	E: U.S.A.
------------------	--------------	----	----------------	----	-----------

CUCURBITELLA $x = 13$

<i>asperata</i>		26	Covas & S. 1946	—	Argentine
-----------------	--	----	-----------------	---	-----------

LUFFA $x = 13$

<i>acutangula</i>	Dishcloth G.	26	McKay 1930	ToV	Old World
<i>cylindrica</i>	Loofah	26	Yahama & S. 1936	ToTV	O.W. Trop.
v. <i>gigantea</i>		26	McKay 1930		cult

104 BEGONIACEAE

BEGONIA $x = ?$

<i>picta</i>		22	White <i>et al.</i> 1946	H	Himalayas
<i>heracleifolia</i>		24	Hamel 1937	H	Mexico
<i>hirsuta</i>		24	Matsuura & O. 1936	H	Guiana
<i>nelumbiifolia</i>		26	Hamel 1937	H	Mexico
<i>haageana</i>		48	M. & O. 1936	H	Brazil
<i>evansiana</i>		{ 24	Bowden 1945a	H	Ch., Jap., Mal.
		{ 26	White <i>et al.</i> 1946		
<i>incana</i>		{ 24	Hamel 1937	H	Mexico
		{ 28	Mereminski 1936		
<i>socotrana</i>		28	M. & O. 1936	H	Socotra
<i>carminata</i>		42	" "	H	cult
<i>coccinea</i>		42	" "	H	S. America
<i>cucullata</i>		56	Bowden 1945a	—	Brazil
<i>maculata</i>		56	M. & O. 1936	H	"

BEGONIA (cont.)

<i>gracillis</i>	84	M. & O. 1936	H	Mexico
<i>metallica</i>	70	„ „	H	Brazil
<i>schmidtiana</i>	{ 32 „ 1943		H	„
	26 ? Pastrana 1932			
<i>dichotoma</i>	36	Hamel 1937	H	Venezuela
<i>longipes</i>	36	„ „	H	Mexico
<i>vitifolia</i>	36	„ „	H	Brazil
<i>albo-picta</i>	54	M. & O. 1936	H	„
<i>angularis</i>	54	Hamel 1937	H	„
<i>wilsonii</i>	54	M. & O. 1936	H	Szechuan
<i>dregei</i>	26	M. & O. 1936	H	S. Africa
<i>argenteo-guttata</i>	52	„ „	H	cult
<i>margaritae</i>	52	„ „	H	„
<i>ulmifolia</i>	30	M. and O. 1943	H	Venezuela
<i>venosa</i>	30	Hamel 1937	H	Brazil
<i>fuchsioides</i>	60	M. & O. 1936	H	Mexico
<i>kotoensis</i>	60	„ 1943	—	Japan
<i>semperflorens</i>	33, 36, 60, 66	M. & O. 1943	H	Brazil, cult
<i>rex</i>	32, 33, 34	„ „	H	Himalayas, cult
	42, 43, 44			

I05 DATISCEAE

DATISCA x = 11

<i>cannabina</i>	22	Sinoto 1929	H	S.W. Asia, Him.
------------------	----	-------------	---	-----------------

I06 CARICACEAE

CARICA x = 9

<i>candamarcensis</i>	Mountain Papaw	18	Heilborn 1921	F	Trop. Am.
<i>cauliflora</i>		18	Storey 1941	—	Venezuela
<i>chrysopetala</i>		18	„ „	—	Ecuador
<i>dodecaphylla</i>		18	Kumar & S. 1944	—	Brazil
<i>peltata</i>		18	Storey 1941	—	Nicaragua
<i>pentagona</i>		18	„ „	—	Ecuador
<i>pubescens</i>		18	Kumar & A. 1942a	—	Guatemala
<i>quercifolia</i>		18	EKJ*	—	S. America
<i>papaya</i>	Papaya, "Papaw"	{ 18	Eichhorn 1937b	FM	Trop. America
		36	Hofmeyer 1945		

I07 CACTACEAE

TRIBE I: PERESKIEAE

PERESKIA x = 11

<i>aculeata</i>	Barbadoes Gooseberry	22	Katagiri 1952	F	Mexico, W.I.
-----------------	----------------------	----	---------------	---	--------------

PERESKIA (cont.)				
<i>saccharosa</i>	22	Katagiri 1952	H	Argentina, Para.
<i>tampicana</i>	22	Remski 1954	—	Mexico

TRIBE II: OPUNTIEAE

OPUNTIA* $x = 11$ (Apomixis)

<i>basilaris</i>	22	Takagi 1938	—	Mexico
<i>brasiliensis</i>	22	Stockwell 1935	—	S. America
<i>chlorotica</i>	22	" "	—	N. America
<i>microdasys</i> & 4 spp.	22	Katagiri 1952	H	Mexico
<i>repens</i>	22	Bowden 1945a	—	Puerto Rica
<i>santa-rita</i>	22	Stockwell 1935	—	S: U.S.A.
<i>compressa</i> (opuntia)	{ 22 (44)	Bowden 1945a	—	N. America
	44	Katagiri 1952		
<i>polyacantha</i>	{ 22	M. & S. 1935	—	"
	44, c. 66	Stockwell 1935		
<i>monacantha</i> (vulgaris)	33	Katagiri 1952	F	S. America
<i>leucotricha</i>	44	" "	H	Mexico
<i>salmiana</i>	44	" "	H	S. America
<i>tomentosa</i>	44	" "	H	Mexico
<i>impedita</i>	44 (88)	Bowden 1945a	—	Florida
<i>dillenii</i> Prickly Pear	66	Carpio 1952	FFo ₁	Sub.-Trop. Amer.
<i>discata</i>	c. 66	Stockwell 1935	—	Arizona
<i>fragilis</i>	66	Bowden 1945a	—	W: U.S.A.
<i>phaeacantha</i>	c. 66	Stockwell 1935	—	Mex., Tex.
<i>subulata</i>	66	Katagiri 1952	H	Chile, Argentine
<i>elongata</i>	66, 88	" "	—	Mexico
<i>diademata</i>	{ 22	Takagi 1938	H	Argentina
	88	Katagiri 1952		
<i>ficus-indica</i>	88	Carpio 1952	F	S. America
<i>cylindrica</i>	110	Katagiri 1952	H	Peru, Ecuador

PTEROCACTUS $x = 11$

<i>tuberosus</i>	22 (44)	Schnack & C. 1947	—	Argentina
------------------	---------	-------------------	---	-----------

CONSOLEA $x = 11$

<i>rubescens</i>	132	Katagiri 1952	H	W. Indies
------------------	-----	---------------	---	-----------

TRIBE III: CEREEAE

All genera in this tribe have $x = 11$ and nearly all species have 22 or 44 chromosomes.

ACANTHOCEREUS

<i>pentagonus</i>	22	Beard 1937	—	Trop. America
-------------------	----	------------	---	---------------

ASTROPHYTUM*

<i>asterias</i>	22	Beard 1937	H	Mexico
<i>capricorne</i> & 2 spp.	22	Katagiri 1952	H	"

BORZICACTUS

<i>aurivillius</i>	22	Katagiri 1952	H	Peru
--------------------	----	---------------	---	------

CARNEGIEA

<i>gigantea</i>	22	Stockwell 1935	FW	Ariz., Calif.
-----------------	----	----------------	----	---------------

CEREUS *				
<i>peruvianus</i>	22	Takagi 1938	H	Brazil, Argentine
<i>tetragonus</i> & 1 sp.	22	Katagiri 1952	—	Brazil
CORYPHANTHA				
<i>runyonii</i>	22	Beard 1937	H	Texas
DOLICHOTHELE				
<i>longimamma</i>	22	Katagiri 1952	H	Mexico
ECHINOCACTUS				
<i>grusonii</i>	22	Katagiri 1952	H	„
ECHINOFOSSULOCACTUS				
<i>crispatus</i>	22	Katagiri 1952	H	Mexico
<i>grandicornis</i>	c. 22	Beard 1937	H	„
ECHINOPSIS *				
<i>tubiflora</i> & 2 spp.	22	Katagiri 1952	H	Brazil, Argentine
EPIPHYLLUM				
<i>strictum</i>	22	Beard 1937	—	Trop. America
ESCOBARIA				
<i>runyonii</i>	22	Beard 1937	—	California
FEROCACTUS *				
<i>acanthodes (rostii)</i>	22	Stockwell 1935	H	„
<i>latispinus</i> & 4 spp.	22	Katagiri 1952	H	Mexico
GYMNOCALYCIUM *				
<i>gibbosum</i>	22	Schnack & C. 1947	H	Argentine
<i>platense</i> & 2 spp.	22	Katagiri 1952	H	„
HAMATOCACTUS *				
<i>setispinus</i> & 1 sp.	22	Katagiri 1952	H	Mex., Tex.
HELIOCEREUS				
<i>amecamensis</i>	22	Rowley unp.	H	Mexico
HOMALOCEPHALA				
<i>texensis</i>	22	Beard 1937	H	Mex., Tex.
HYLOCEREUS *				
<i>undatus</i> & 5 spp.	22	Beard 1937	H	W. Indies
LEMAIREOCEREUS *				
<i>pruinosis</i> & 1 sp.	22	Katagiri 1952	H	Mexico
LOPHOCEREUS				
<i>schottii</i>	22	Stockwell 1935	—	Calif., Ariz.
LOPHOPHORA				
<i>williamsii</i>	22	Beard 1937	HM	Mex., Tex.
MONVILLEA				
<i>spiegazzinii</i>	22	Katagiri 1952	H	Argentine

NOPALXOCHIA <i>ackermannii</i>	22	Beard 1937	H	Mexico
NYCTOCEREUS <i>serpentinus</i>	22	Beard 1937	H	„
PHELLOSPERMA $x = 11$ <i>tetrancistra</i>	22	Remski 1954	H	W: N. Amer.
RHIPSALIS <i>mesembryanthoides</i>	22	Beard 1937	—	Brazil
SCHLUMBERGERA <i>bridgesii</i> <i>russelliana</i>	22 22	Takagi 1938 Stockwell 1935	H H	Trop. S. Amer. Brazil
SELENICEREUS * <i>pteranthus</i> & 3 spp.	22	Beard 1937	HM	Mexico
THELOCACTUS <i>bicolor</i>	22	Beard 1937	H	Tex., Mex.
WERCKLEOCEREUS <i>glaber</i>	22	Beard 1937	—	Guatemala
WILCOXIA <i>posegeri</i> <i>schmollii</i>	22 22	Beard 1937 Katagiri 1952	H H	Tex., Mex. Mexico
ZYGOCACTUS <i>truncatus</i> Christmas Cactus	22	Remski 1954	H	Brazil
ECHINOCEREUS * <i>procumbens</i> & 1 sp. <i>reichenbachii</i> & 5 spp. <i>engelmannii</i>	22 22 44	Katagiri 1952 Beard 1937 Stockwell 1935	H H H	Mexico Tex., N. Mex. N. America
MAMMILLARIA (NEOMAMMILLARIA) * $x = 11$ <i>aureiceps</i> & 8 spp. <i>bocasana</i> & 4 spp. <i>minuta</i> 89 spp. <i>compressa</i> <i>dioica</i> <i>morganiana</i> <i>multiceps</i> <i>pseudocrucigera</i> <i>ruessii</i> <i>prolifera</i> <i>parkinsonii</i> <i>capensis</i>	22 22 22 22 44 44 44 44 44 44 44, 66 44, 88 264!	Beard 1937 Katagiri 1952 Beard 1937 Remski 1954 „ „ „ „ „ „ „ „ „ „ „ „ „ „ „ „	H H H H H H H H H H H H H	Mexico „ — C. America Mexico Calif. Mexico „ „ „ Hond., Guat. W. Indies Mexico Calif.
MYRTILLOCACTUS <i>geometrizans</i>	22, 44	Katagiri 1952	FH	Mexico

TRICHOCEREUS				
<i>chiloensis</i>	22	Katagiri 1952	—	Chile
<i>spachianus</i>	44	„ „	H	Argentina
CEPHALOCEREUS				
<i>chrysacanthus</i>	44	Katagiri 1952	H	Mexico
<i>royenii</i>	44	„ „	H	W. Indies
MEDIOCACTUS				
<i>coccineus</i>	44	Beard 1937	H	Brazil, Argentina
NOTOCACTUS				
<i>apricus</i>	38?	Takagi 1938	H	Uruguay
<i>mammulosus</i>	44	Katagiri 1952	H	Argent., Urug.
ARIOCARPUS				
<i>fissuratus</i>	38?	Takagi 1938	M	Tex., Mex.

Group VII

THEALES

108-117

ST

MYRTALES

118-122

ST

GUTTIFERALES

123-126

(H)ST



Eucalyptus rudis

108 THEACEAE (TERNSTROEMACEAE)

CAMELLIA (THEA) $x = 15$

<i>cuspidata</i>		30	Janaki Ammal 1953b	H	E. & C. China
<i>hongkongensis</i>		30	" " "	H	Hong Kong
<i>kissii</i>	Wild Tea, Letpet	30	" " "	B	Him., Bur., China
<i>lanceolata</i>		30	" " "	—	E. Indies, Philip.
<i>maliflora</i>		30	" " "	H	China
<i>salicifolia</i>		30	" " "	—	S.E. China, Form.
<i>italiensis</i>		30	" " "	H	Yunnan
<i>japonica</i>	Camellia	30	" " "	BHO	Japan, Korea
<i>v. grandiflora</i>		45	" " "	H	<i>cult</i>
<i>sinensis</i>	Chinese Tea	30	" " "	BM	Yunnan, <i>cult</i> , Chi.
<i>v. assamica</i>	Assam Tea	30	" " "	B	Assam, S.E. Yun.
<i>v. macrophylla</i>		45	" " "	H	<i>cult</i>
		60	Simura 1935	"	
<i>saluenensis</i>		30	Janaki Ammal 1953b	H	Yunnan
<i>v. macrophylla</i>		60	" " "	H	"
<i>pitardi</i>		30	" " "	H	C. & S.W. China
<i>v. yunnanica</i>		90	" " "	H	Yunnan
<i>oleifera</i>	Tea Oil Pl.	90	" " "	O	E. China (<i>cult</i>)
<i>reticulata</i>		90	" " "	H	Yunnan
<i>sasanqua</i>	Tea Oil Pl.	90	" " "	HOP	Japan (<i>cult</i>)

EURYA $x = 21$

<i>japonica</i>	42	Nakajima 1942	H	E. Asia
-----------------	----	---------------	---	---------

TERNSTROEMIA $x = ?$

<i>japonica</i>	50	Morinaga & F. 1931	H	Sub.-Trop. Asia
-----------------	----	--------------------	---	-----------------

112 ACTINIDIACEAE

ACTINIDIA $x = ?$

<i>polygama</i>	Silver Vine	c. 58	Nakajima 1942	FH	Manch., Korea,
		c. 116	Bowden 1940b		China
<i>kolomicta</i>		c. 112	Nakajima 1942	H	Jap., China, Man.
<i>arguta</i>	Tara Vine	c. 116	Bowden 1940b	H	Him., Jap., Man.
<i>chinensis</i>	Ch. Gooseberry	c. 116	" "	HFV	China
		c. 160	Rizet 1945		
<i>fairchildii</i> (<i>arguta</i> \times <i>chinensis</i>)		c. 132	Bowden 1940b	F	<i>cult</i>

114 OCHNACEAE

OCHNA $x = 7$ (Apomixis)

<i>serrulata</i>	Natal Pear	35	Chiarugi 1930b	H	S. Africa
------------------	------------	----	----------------	---	-----------

116 DIPTEROCARPACEAE

PENTACME $x = 6$

<i>siamensis</i>		12	Tixier 1953	W	S.E. Asia
------------------	--	----	-------------	---	-----------

DIPTEROCARPUS $x = 10$

<i>alatus</i>	20	Tixier 1953	Re	S.E. Asia
<i>intricatus</i>	20	" "	ReW	Vietnam
<i>obtusifolius</i>	20	" "	W	S.E. Asia

HOPEA $x = 10$

<i>odorata</i> Thingam	20	Tixier 1953	MReW	Burma, Siam
------------------------	----	-------------	------	-------------

ANISOPTERA $x = 10$

<i>cochinchinensis</i>	20	Tixier 1953	W	Vietnam, Siam
------------------------	----	-------------	---	---------------

118 MYRTACEAE

SF1: LEPTOSPERMOIDEAE

ACTINODIUM $x = 6$

<i>cunninghamii</i>	12	Smith-White 1950	—	W. Australia
---------------------	----	------------------	---	--------------

DARWINIA* $x = 6, 7, 9$

(i) <i>citriodora</i> & 3 spp.	12	Smith-White 1950	H	W. Australia
<i>diosmoides</i> & 5 spp.	12	" 1954a	H	"
<i>pauciflora</i>	18	" "	—	"
<i>vestita</i>	18	" "	—	"
(ii) <i>micropetala</i>	14	" "	—	S. Australia

VERTICORDIA* $x = 6, 8, 9, 11$

(i) <i>grandiflora</i>	12	Smith-White 1954a	—	W. Australia
<i>nitens</i> & 4 spp.	16	" "	H	"
<i>chrysantha</i>	32	" "	—	"
<i>brownii</i> & 2 spp.	18	" "	H	"
<i>habrantha</i>	36	" "	—	"
<i>monadelpha</i>	c. 36	" "	—	"
<i>densiflora</i> & 2 spp.	22	" "	H	"
(ii) <i>drummondii</i> & 2 spp.	22	" "	—	"
<i>grandis</i>	44	" "	—	"

HOMORANTHUS* $x = 9$

<i>darwinoides</i> & 2 spp.	18	Smith-White 1954a	—	N.S.W.
-----------------------------	----	-------------------	---	--------

CHAMAELAUCIUM* $x = 11$

<i>uncinatum</i> & 2 spp.	22	Smith-White '50, '54a	H	W. Australia
---------------------------	----	-----------------------	---	--------------

PILEANTHUS $x = 11$

<i>peduncularis</i>	22	Smith-White 1954a	—	W. Australia
---------------------	----	-------------------	---	--------------

AGONIS $x = 11$

<i>flexuosa</i>	22	Smith-White 1948a	H	W. Australia
-----------------	----	-------------------	---	--------------

ANGOPHORA $x = 11$

<i>cordifolia</i>	22	Smith-White 1942	H	N.S.W.
<i>intermedia</i>	22	" "	H	E. Australia
<i>lanceolata</i>	22	" "	H	"

BACKHOUSIA $x = 11$

<i>citriodora</i> Sweet Verbena T.	22	Smith-White 1942	HO	Australia
<i>myrtifolia</i>	22	" 1948a	H	N.S.W.

BAECKEA * $x = 11$				
<i>crenulata</i>		22	Smith-White 1948a	— N.S.W.
<i>diosmifolia</i> & 3 spp.		22	" "	H "
CALOTHAMNUS $x = 11$				
<i>villosus</i>		22	Smith-White 1948a	H W. Australia
CALYTHRIX $x = 11$				
<i>fraseri</i>		22	Smith-White 1950	— W. Australia
<i>tetragona</i>		22	" "	H E. "
EUCALYPTUS $x = 11$				
<i>alba</i>		22	Krug & A. 1949	W N. Australia
<i>angulosa</i>		22	Atchison 1947b	W Australia
<i>behriana</i>	Mallee Box	22	Smith-White 1948a	W N.S.W.
<i>botryoides</i>	Bangalay	22	Atchison 1947b	HShW Australia
<i>calophylla</i>	Marri	22	" "	HW W. Australia
<i>camaldulensis</i> (rostrata)	Red Gum	22	" "	DMW Australia
<i>citriodora</i>	Lemon-scented G.	22	" "	HOW E. Australia
<i>cladocalyx</i> (<i>corynocalyx</i>)	Sugar Gum	24!	Atchison 1947b	FoHSh Australia
<i>diversicolor</i>	Karri	22	" "	W W. Australia
<i>dives</i>	Broad-leaved Peppermint	22	Smith-White 1942	HO N.S.W.
<i>ficifolia</i>	Red Flowering Gum	22	" "	H W. Australia
<i>globulus</i>	Tasm. Blue Gum	22	McAulay <i>et al.</i> 1936	HOW Tasmania
<i>gummifera</i>	Bloodwood	22	Smith-White 1942	OW Australia
<i>gunnii</i>	Cider Gum	22	Atchison 1947b	HW Tasmania
<i>haemostoma</i>	Scribbly Gum	22	Smith-White 1942	W Australia
<i>incrassata</i>		22	" "	OW "
<i>johnstoni</i>		22	McAulay <i>et al.</i> 1936	W Tasmania
<i>kirtoniana</i>		22	Atchison 1947b	W Australia
<i>linearis</i>		22	McAulay & C. 1937	H "
<i>longifolia</i>	Woolly Butt	22	Atchison 1947b	W "
<i>maculata</i>	Spotted Gum	22	" "	HW "
<i>obliqua</i>	Messmate	22	McAulay & C. 1937	HW "
<i>paniculata</i>	Grey Ironbark	22	Smith-White 1942	W "
<i>pauciflora</i>	Snow Gum	22	McAulay & C. 1937	H "
<i>pulverulenta</i>		22	Atchison 1947b	H "
<i>redunca</i> v. <i>elata</i>	Wandoo	24!	" "	W W. Australia
<i>resinifera</i>	Red Mahogany	22	" "	W Australia
<i>rubida</i>	Candlebark	22	" "	ShW "
<i>rudis</i>	Swamp Gum, Moitch	22	" "	W "
<i>saligna</i>	Sydney Blue Gum	22	Krug & A. 1949	W "
<i>sideroxylon</i>	Red Ironbark	22	Smith-White 1942	HW "
<i>staigeriana</i>		22	" 1950	H N. Queensland
<i>steedmanii</i>		22	Atchison 1947b	W W. Australia
<i>stuartiana</i>	Apple Box	22	" "	W Australia
<i>tetraptera</i>		22	Smith-White 1950	W W. Australia
<i>torquata</i>	Coolgardie Gum	22	Atchison 1947b	H Australia
<i>triantha</i>	White Mahogany	22	" "	W "
<i>viminalis</i>	Manna Gum	22	" "	W "
KUNZEA $x = 11$				
<i>ambigua</i> (<i>corifolia</i>)		22	Smith-White 1948a	H N.S.W.
<i>capitata</i>		22	" "	— "

MELALEUCA * $x = 11$

<i>elliptica</i>	22	Smith-White 1948a	H	W. Australia
<i>stypelioides</i>	22	" "	H	N.S.W.
<i>thymifolia</i> & 8 spp.	22	" "	H	"

MICROMYRTUS $x = 11$

<i>ciliata (microphylla)</i>	22	Smith-White 1950	H	E. Australia
------------------------------	----	------------------	---	--------------

SYNCARPIA $x = 11$

<i>laurifolia</i>	22	Smith-White 1948a	—	N.S.W.
-------------------	----	-------------------	---	--------

THRYPTOMENE $x = 11$

<i>calycina (mitchelliana)</i>	22	Smith-White 1950	H	E. Australia
--------------------------------	----	------------------	---	--------------

TRISTANIA $x = 11$

<i>conferta</i> Brisbane Box	22	Smith-White 1942	HW	Australia
<i>laurina</i>	22	" 1948a	H	N.S.W.

CALLISTEMON * $x = 11$

<i>citrinus</i> Bottle-Brush Tree & 9 spp.	22	Smith-White 1948a	HO	E. Australia
<i>pinifolius</i> 22, c. 30, 33	"	" "	H	N.S.W.
<i>linearis</i> 22, 33, 44	"	" "	H	"
<i>rigidus</i> 22, 44	"	" "	H	"
<i>viminalis</i> 44	"	" "	—	Queensland

LEPTOSPERMUM * $x = 11$

<i>stellatum</i> & 11 spp.	22	Smith-White 1948a	H	Australia
<i>parvifolium</i>	44	" "	—	"

SF2: MYRTOIDEAE

FEIJOA $x = 11$

<i>sellowiana</i> Feijoa, Pineapple-Guava	22	Bowden 1940a	F	Brazil
---	----	--------------	---	--------

MYRTUS $x = 11$

<i>communis</i> Myrtle	22	Greco 1929	HPSp	Medit., S.W. Asia
------------------------	----	------------	------	-------------------

PIMENTA $x = 11$

<i>acris</i> Lemon-scented Allspice	22	EKJ*	PSp	W. Indies
-------------------------------------	----	------	-----	-----------

EUGENIA $x = 11$

<i>malaccensis</i> Malacca Apple	22	van der Pijl 1934	F	Trop. Asia
<i>uniflora</i> Surinam Cherry	22	Bhaduri & I. 1949	FH	Brazil
(<i>michelli</i>)				
<i>jambos</i> Rose Apple	{ 28, c. 42	van der Pijl 1934		
	c. 54	" "	FH	Trop. Asia
	46	Bhaduri & I. 1949		
	44	Smith-White 1948a	—	N.S.W.
<i>leuhmanni</i>	44	" "	HW	"
<i>myrtifolia</i>	44	" "	HW	"
<i>smithii</i> Lilli-pilli	44	" "		
<i>cumini</i> Jambalam	{ 44	Tjio 1948		
(<i>jambolana</i>)	44, 66	Bhaduri & I. 1949	ADFW	India
<i>javanica</i> Jum Rool	45	" "	F	E. Indies

PSIDIUM $x = 11$

<i>guava</i>	Guava	{	22 Atchison 1947 b,	FVit	Trop. Amer.
Seedless var.			EKJ*		
		{	33 Kumar & R. 1952		
<i>cattleianum</i>	Purple or		88 Atchison 1947b	F	Brazil
Gooseberry G.			88 Smith-White 1948a		

119 LECYTHIDACEAE

COUROUPITA $x = 18$

<i>guianensis</i>	Cannonball T.	36	Banerji 1950a	HSh	Trop. America
-------------------	---------------	----	---------------	-----	---------------

120 MELASTOMACEAE

MEMECYLON $x = 7$

<i>aylmeri</i>	14	Favarger 1952a	—	W. Tr. Africa
----------------	----	----------------	---	---------------

SONERILA $x = 8$

<i>wallichii</i>	16	Subramanyam 1944	—	India
------------------	----	------------------	---	-------

GUYONIA $x = 9$

<i>ciliata</i>	18	Favarger 1952a	—	W. Tr. Africa
----------------	----	----------------	---	---------------

OSBECKIA $x = 10$

<i>afzelii</i>	20	Favarger 1952a	—	W. Tr. Africa
<i>liberica</i>	20	" "	M	"
<i>tubulosa</i>	20	" "	M	"
<i>parvifolia (zeylanica)</i>	20	Subramanyam 1946	H	Ceylon
<i>rosea</i>	40	" "	—	Nilgiri

DISSOTIS $x = 10, 16, 17$

<i>brazzaei</i>	20	Favarger 1952a	—	W. Tr. Africa
<i>rotundifolia</i>	30	" "	HM	"
<i>jacquesii</i>	32	" "	—	"
<i>capitata</i>	34	" "	BM	"

PREUSSELLA $x = 11$

<i>chevalieri</i>	44	Favarger 1952a	—	W. Tr. Africa
-------------------	----	----------------	---	---------------

DINOPHORA $x = 12$

<i>spenneroides</i>	24	Favarger 1952a	—	W. Tr. Africa
---------------------	----	----------------	---	---------------

MELASTOMA $x = 14$

<i>candidum</i>	28	Sugiura 1936b	H	China
-----------------	----	---------------	---	-------

TRISTEMMA $x = 17$

<i>hirtum</i>	34	Favarger 1952a	—	W. Tr. Africa
<i>incompletum</i>	34	" "	—	"
<i>involutatum</i>	34	" "	M	"

SAKERSIA $x = ?$

<i>africana</i>	c. 40	Favarger 1952a	—	W. Tr. Africa
-----------------	-------	----------------	---	---------------

CALVOA $x = ?$				
<i>monticola</i>	c. 44	Favarger 1952a	—	W. Tr. Africa
DICELLANDRA $x = ?$				
<i>barteri</i>	64-68	Favarger 1952a	—	W. Tr. Africa

121 COMBRETACEAE

QUISQUALIS $x = 11$				
<i>indica</i>	Rangoon Creeper	22	Rajagopalan 1949	HMN Tr. Asia & Afr.
TERMINALIA $x = 12$				
<i>catappa</i>	Indian Almond	24	Simmonds 1954	NW India, Malaya

123 HYPERICACEAE

HYPERICUM $x = 7, 8, 9, 10, 12. x_2 = 19$ (Apomixis)				
$x = 7$				
<i>rumelicum</i>	14	Nielsen 1924	H	S.E. Europe
$x = 8$				
<i>boreale (mutilum)</i>	16	Hoar & H. 1932	—	N. America
<i>elatum</i>	16	Suzuka 1950	H	Madeira, Canar.
<i>elodeoides</i>	16	Sugiura 1944	—	Himal., Burma
<i>humifusum</i>	16	Winge 1925	H	W. & C. Eur.
<i>montanum</i>	16	Nielsen 1924	H	Eur., Cauc., Algeria
<i>orientale</i>	16	" "	H	Asia Minor
<i>punctatum</i> (ring of 16)	16	Hoar 1931	—	N. America
<i>quadrangulum (maculatum)</i>	16	Noack 1939	H	Eur., W. Sib.
<i>senanense</i>	16	M. & S. 1935	—	Japan
<i>tetrapterum (acutum)</i>	16	Noack 1939	H	Europe, Asia M., N. Africa
<i>tomentosum</i>	16	Nielsen 1924	H	S. Eur., N. Africa
<i>undulatum</i>	32	Sugiura 1944	—	Spain
<i>perforatum</i> (Apo.)	32	Noack 1939	H	Eur., Himal., Sib.
$x = 9$				
<i>ascyron</i>	18	Nielsen 1924	H	N.E.: N. Amer., C. & E. Asia
<i>coris</i>	18	" "	H	S. Europe
<i>frondosum (aureum)</i>	18	Hoar & H. 1932	H	S.E.: U.S.A.
<i>hirsutum</i>	18	Noack 1939	H	Eur., Cauc., Sib.
<i>kalmianum</i>	18	Hoar & H. 1932	H	E: N. Amer.
<i>olympicum</i>	18	Sugiura 1944	H	Greece, Asia M.
<i>polyphyllum</i>	18	" 1936a	H	S.W. Asia Minor
<i>prolificum</i>	18	Hoar & H. 1932	H	E: N. Amer.
<i>pulchrum</i>	18	Bøcher 1940	—	Europe
<i>rhodopeum (origanifolium)</i>	18	Nielsen 1924	H	S.E. Eur., Asia M.
<i>moserianum</i>	36	Sugiura 1944	H	<i>cult</i>
<i>patulum</i>	36	" 1936a	H	China
$x = 10$				
<i>calycinum</i>	St. John's Wort	20	Maude 1939	H S.E. Europe

HYPERICUM (cont.)

<i>androsaemum</i>	Tutsan	40	Nielsen 1924	HM	Eur., Cauc., Asia M.
<i>hircinum</i>	Stinking St. J. W.	40	„ „	H	Medit., C. Eur.
<i>inodorum</i>		40	„ „	H	E. Eur., Cauc.
$x = 12$					
<i>gentianoides</i>	Orange Grass	24	Hoar & H. 1932	—	N. America
$x_2 = 19$					
<i>virginicum</i>		38	„ „	—	„
CRATOXYLON	$x = 7$				
<i>formosum</i>		14	Tixier 1953	W	S.E. Asia

126 GUTTIFERAE

CALOPHYLLUM	$x = 16$				
<i>inophyllum</i>	Pinnay T.	32	Tixier 1953	MOW	O.W. Tropics
MESUA	$x = 16$				
<i>ferrea</i>	Ironwood	32	Tixier 1953	FOW	India, Ceylon
OCHROCARPUS	$x = 16$				
<i>siamensis</i>		32	Tixier 1953	FW	S.E. Asia
GARCINIA	$x = ?$ (Apomixis)				
<i>hanburyi</i>	Gamboge	44	Tixier 1953	D	Siam
<i>indica</i>	Kokum	c. 54	Krishnaswamy & R. 1949	DFMO	India
<i>speciosa</i>	Palawa T.	c. 55	„ „	ReW	Burma, Andaman
<i>mangostana</i>	Mangosteen	c. 76	„ „	F	Moluccas
<i>ambogia</i>	Goraka.	c. 58	Krishnaswamy <i>et al.</i> 1954	D Sp. ?	E. Indies
<i>xanthochymus (tinctoria)</i>		c. 80	„ „	F	India, Mal.

Group VIII

TILIALES

127-131

ST

MALVALES

132

HS(T)

MALPIGHIALES

133-135

ST

EUPHORBIALES

136

(H)ST



Gossypium arboreum

128 TILIACEAE

CORCHORUS $x = 7$

<i>acutangulus</i>		14	Banerji 1932	T	Tropics
<i>capsularis</i>	Jute	14	Nakajima 1936	T	India
<i>fascicularis</i>		14	Rao & D. 1953	—	O.W. Tropics
<i>olitorius</i>	Jew's Mallow	14	Banerji 1932	(V)T	India
<i>tridens</i>		14	Mukherjee 1952a	—	Tropics
<i>trilocularis</i>		{ 14	" "	—	O.W. Tropics
		14	Rao & D. 1953	—	O.W. Tropics
<i>siliquosus</i>		28	" "	—	Sub-Trop. Amer

GREWIA $x = 9$

<i>parviflora</i>		18	Dermen 1932a	T	China
<i>asiatica</i>	Phalsa	36	Bhaduri & B. 1949	FT	India

CLAPPERTONIA (HONCKENYA) $x = (9) 18$

<i>ficifolia</i>		36	Baldwin & S. 1951d	H	Trop. Africa
<i>minor</i>		36	" "	—	"

TRIUMFETTA $x = 16$

<i>bartramia</i>	Champadang	32	Lay 1950	T	Tropics
<i>as rhomboidea</i>		48	Rao & R. 1952		
<i>calderoni</i>		32	Lay 1950	—	"
<i>semitriloba</i>		32	" "	T	"

TILIA $x = 41$

<i>cordata</i>	Linden	82	Dermen 1932a	MW	Europe
<i>glabra (americana)</i>		82	" "	W	N. America
<i>neglecta</i>		82	" "	W	"
<i>oliveri</i>		82	" "	W	China
<i>petiolaris</i>	Weeping W. L.	82	" "	H	Hungary
<i>platyphyllos</i>		82	" "	MShW	Europe
<i>vulgaris (europaea)</i>	Lime Tree	82	" "	MW	"
<i>amurensis</i>	Bass Wood	164	" "	TW	Siberia
<i>insularis</i>		164	" "	W	Japan
<i>maximowicziana</i>		164	" "	W	"
<i>tuan</i>		164	" "	W	China

130 STERCULIACEAE

GUAZUMA $x = 8$

<i>tomentosa</i>	Bastard Cedar	16	Youngman 1931	(F)TW	Tr. America
------------------	---------------	----	---------------	-------	-------------

HERRANIA $x = 10$

<i>albiflora</i>		20	Simmonds 1954	—	Trop. Amer.
<i>purpurea</i>		20	" "	—	"

THEOBROMA $x = 10$

<i>angustifolia</i>		20	Simmonds 1954	—	Trop. Amer
<i>bicolor</i>	Peru Cocoa	20	" "	B	"
<i>cacao</i>	Cocoa	20	" "	BM	"
<i>leiocarpa</i>		20	Carletto 1948	—	"

THOMASIA	$x = 10$				
<i>solanacea</i>		20	Chatelier 1939	H	W. Australia
COLA	$x = 10$				
<i>acuminata</i>	Kola nut	40	EKJ*	BMSp	Trop. Africa
FREMONTIA	$x = 10$				
<i>californica</i>		40	Lenz 1950	H	California
STERCULIA (FIRMIANA)	$x = 10$				
<i>platanifolia</i>	Parasol T.	40	Chatelier 1939	T	China, Japan
<i>colorata</i>		40	Pathak <i>et al.</i> 1949	HT	India, Siam
PTEROSPERMUM	$x = 19$				
<i>aurifolium</i>		38	Pathak <i>et al.</i> 1949	H	E. Indies
DOMBEYA	$x = 23$				
<i>spectabilis</i>		46	Chatelier 1939	H	Trop. Africa

131 BOMBACACEAE

BOMBAX	$x = ?$				
<i>malabaricum</i>	Silk Cotton	c. 72	EKJ*	OTW	S.E. Asia
CEIBA (ERIODENDRON)	$x = ?$				
<i>pentandra</i>	Silk Cotton T.	72, 80	Heyn 1936	(O)T	S.E. Asia & Afr.
	Kapok T.				
<i>indica</i> strains		88	Tjio 1948		
<i>occidentale</i>		88	Heyn 1936	(O)T	Trop. Amer.
	(<i>pentandra</i> v. <i>caribaea</i>)				

132 MALVACEAE

MODIOLASTRUM	$x = 5$				
<i>malvifolium</i>		10	Krapovickas 1949	—	Temp. S. Am.
NOTOTRICHE	$x = 5$				
<i>caesia</i>		10	Krapovickas 1951b	—	Temp. S. Am.
<i>pusilla</i>		10	" "	—	"
<i>rugosa</i>		10	" "	—	"
<i>hillii</i>		20	" "	—	"
<i>sarmentosa</i>		20	" "	—	"
<i>copon</i>		30	" "	—	"
<i>ovata</i>		c. 30	" "	—	"
TARASA	$x = 5$				
<i>albertii</i>		10	Krapovickas 1949	—	Chile
SPHAERALCEA *	$x = 5, 17, 33$				
<i>australis</i>	& 8 spp.	10	Krapovickas 1949	—	S. Amer.
<i>coccinea</i>	Globe Mallow	10	Webber 1936	H	W: N. Amer.
	& 5 spp.				
<i>miniata</i>		10	Skovsted 1935	H	Trop. Amer.
<i>ambigua</i>		{ 10	" 1941		
		20, 30	Webber 1936	H	W: N. Amer.

SPHAERALCEA (cont.)

<i>angustifolia</i>	10, 20	Webber 1936	H	Mexico
<i>fendleri</i>	{ 10, 20 15	" " EKJ	H	California
<i>incana</i>	10, 20	Webber 1936	—	W: N. Amer.
<i>rusbyi</i>	10, 20	" "	—	Arizona
<i>lobata</i>	20	Skovsted 1941	—	N. America
<i>patagonica</i>	20	Covas & S. 1947	—	Patagonia
<i>emoryi</i>	20, 30, 50	Webber 1936	H	California
<i>chenopodifolia</i>	30	Krapovickas 1949	—	Argentina
<i>mendocina</i>	30	" "	—	Chile
<i>abutiloides</i>	34	Webber 1936	H	Bahamas
<i>umbellata</i>	34	Skovsted 1935	H	Mexico
<i>rivularis</i>	66	Webber 1936	—	N. America

LECANOPHORA $x = 6$

<i>ecristata</i>	12	Krapovickas 1950	—	Argentina
<i>heterophylla</i>	12	" "	—	"
<i>ameghinoi</i>	24	" "	—	"

CALLIRHOË $x = 6, 7$

<i>involuta</i>	24	Kessler 1932	H	C: U.S.A.
<i>v. lineariloba</i>	42	Skovsted 1935	H	Mex., Texas

WISSADULA $x = 7$

<i>contracta</i>	14	Skovsted 1935	—	Tropics
<i>periplocifolia</i>	14	" 1941	—	"

BASTARDIA $x = 7$

<i>viscosa</i>	28	Skovsted 1941	—	W. Indies
----------------	----	---------------	---	-----------

NAPAEAE $x = 7$

<i>dioica</i>	28	Skovsted 1935	—	N. America
---------------	----	---------------	---	------------

URENA $x = 7$

<i>sinuata</i>	28	Skovsted 1941	T	Tropics
<i>lobata</i> Aramina, Congo Jute	28, 56	" "	T	"

ALTHAEA $x = 7$

<i>cannabina</i>	28, 84	Skovsted 1935, 1941	T	Eur., S.W. Asia
<i>apterocarpa</i>	42	" "	—	S.W. Asia
<i>ficifolia</i> Antwerp H.	42	" "	H	Siberia
<i>officinalis</i> Marsh Mallow	42	" "	HM	Eur., W. Asia, N. Africa
<i>pallida</i>	42	" "	H	Hung., Balkans
<i>pontica</i>	42	" 1941	H	N.E. Medit.
<i>sulphurea</i>	42	" "	H	Pers., Turkestan
<i>rosea</i> Hollyhock	{ 42 56	" " Sugiura 1936b	H	China, <i>cult</i>
<i>sinensis</i>	70	Skovsted 1935	H	China
<i>armenaica</i>	84	" 1941	H	E. Medit.
<i>hohenackeri</i>	c. 84	" 1935	H	Asia M., Cauc.
<i>kragujevacensis</i>	c. 84	" "	H	Serbia

PAVONIA x = 7

<i>hirsuta</i>	28	Skovsted 1941	MT	Trop. Africa
<i>kotschy</i>	c. 28	" 1935	—	Abyssinia
<i>praemorsa</i>	28	" "	H	S. Africa
<i>schimperiana</i>	28	" "	T	Trop. Africa
<i>spinifex</i>	42, 112	" 1935, 1941	H	S. America
<i>hastata</i>	56	" "	H	"

MALVA x = 7

<i>moschata</i> Musk Mallow	42	Skovsted 1935	H	Eur., N. Africa
<i>neglecta (rotundifolia)</i>	42	" "	—	Eur., Asia, N. Afr.
<i>nicaeensis</i>	42	" "	—	Medit.
<i>parviflora</i>	42	" 1941	—	"
<i>syvestris</i> Common Mallow	42	" 1935	H	Europe
<i>pusilla (borealis)</i>	42, 76	" " 1941	—	N. & C. Eur.
<i>alcea</i>	84	" "	H	Europe
<i>verticillata</i>	c. 84	" "	V	Asia
<i>brasiliensis</i>	c. 112	" "	—	Brazil
<i>crispa</i>	c. 112	" "	HV	Europe

TYPHALAEA x = 7

<i>fruticosa</i>	56	Skovsted 1941	—	S. America
------------------	----	---------------	---	------------

MALACHRA x = 7

<i>alceifolia</i>	56	Skovsted 1935	T	Tropics
<i>capitata</i>	56	" "	T	"
<i>fasciata</i>	c. 112	" "	—	Venezuela

MALVAVISCUS x = 7

" <i>arboreus</i> "	c. 84	Skovsted 1935	H	Mexico
---------------------	-------	---------------	---	--------

ABUTILON* x = 7, 8

<i>auritum</i> & 2 spp.	14	Skovsted 1941	—	Ceylon
<i>crispum</i>	14	" 1935	HT	Tropics
<i>avicennae</i> Maba	42	" 1941	HT	cult, China
<i>indicum</i> Indian Mallow	42	" "	HMT	Tropics
<i>molle</i> & 5 spp.	42	" "	—	Peru
<i>striatum</i>	16	" 1935	H	Brazil
<i>umbellatum</i>	16	" 1941	—	W. Indies

SIDA x = 7, 8, 11

<i>acuta</i>	14, 28	Skovsted 1935, 1941	—	C. America
<i>spinosa</i> Cuba Jute	14, 28	" " "	T	Tropics
<i>grewioides</i>	28	" 1941	T	India, Trop. Afr.
<i>triloba</i>	28	" "	—	S. Africa
<i>veronicaefolia</i>	14, 56	" "	—	Trop. Amer.
<i>rhombifolia</i> Sida	14+0-1B, 28	" "	MT	cult, India
Hemp				
<i>v. canariensis</i>	16	Nascimento 1941	—	Queensland
<i>corrugata</i>	16	Skovsted 1941	—	Australia
<i>subspicata</i>	16	" "	—	Trop. Amer.
<i>leprosa</i>	32	Covas & S. 1946	—	Tr. Afr. & Amer.
<i>urens</i>	32	Skovsted 1935	T	
<i>hederacea</i>	22	Heiser & W. 1948	—	N. America

LAVATERA $x = 7, 22$

<i>trimestris</i>		14	Skovsted 1935	H	Medit.
<i>arborea</i>	Tree Mallow	{ 40	Nakajima 1936	H	W. Eur., N. Afr.
		{ 42	Skovsted 1935		
<i>micans</i>		42	Davie 1935	—	Spain
<i>olbia</i>		42	Nakajima 1936	H	S. Europe
<i>cachemiriana</i>		{ 42	Skovsted 1935	H	Himalayas
		{ 44	Davie 1935		
<i>plebeia</i>		43!	Skovsted 1935	—	Australia
<i>thuringiaca</i>		44	" "	—	S. Europe
<i>triloba</i>		44	Davie 1935	—	Spain
<i>mauretanica</i>		c. 84	Skovsted 1935	H	N. Africa
<i>cretica (sylvestris)</i>		c. 112	" "	—	W. Eur., Medit.

HIBISCUS $x = 7, 8, 9, 11, 12, 15, 17, 19, 20, 39$

$x = 7, 8$

<i>trionum</i>	Flower-of-an-Hour	{ 28	Medvedeva 1936	H	Trop. Africa
		{ 56	Skovsted 1935		
<i>gossypinus (gossypium)</i>		{ 28	" "	—	S. Africa
		{ 32	" 1941		
<i>ferrugineus</i>		32	" "	—	Madagascar
<i>mutatus</i>		32	" "	—	Trop. Africa
<i>micranthus</i>		64	" "	TTo	India, Trop. Afr.

$x = 9$

<i>cannabinus</i>	Gamboor, Kenaf, Deccan Hemp	{ 36	Medvedeva 1936	MOTV	O.W. Tropics
		{ 36	Skovsted 1941		
<i>surrattensis</i>		36	" "	MTV	"
<i>abelmoschus</i>	Moskokva	72	" "	HMP	India
<i>aspera</i>		72	" "	MT	Trop. Africa
<i>bifurcatus</i>		72	" "	—	S. Amer.
<i>radiatus</i>		72	Tjio 1948	H	India, Malaya

<i>sabdariffa</i>	Javan Jute	36, 72	Skovsted 1941	BMHVT	O.W. Tropics
		72	Teshima 1933		
<i>esculentus</i>	Okra, Lady's Fingers	{ 120	Purewal & R. 1947	MHVT	Abyssinia, <i>cult</i>
		{ 130	Joshi & H. 1953		
		{ 132	Medvedeva 1936		
<i>tiliaceus</i>	Mahoe	80, 96	Youngman 1931	TW	O.W. Tropics
		92	Skovsted 1935		
<i>rosa-sinensis</i>	Shoe Flower	{ 144	Youngman 1927	DHV	E. Asia
		{ 168	Skovsted 1941		
<i>diversifolius</i>		144, c. 180	" "	T	O.W. Tropics

$x = 11$

<i>cardiophyllus</i>		22	Skovsted 1941	—	Madagascar
<i>phoeniceus</i>		22	" "	—	India
<i>pusillus</i>		22	" "	—	S. Africa
<i>manihot</i>		66	" 1935	HT	S.E. Asia

$x = 12$

<i>panduraeformis</i>		24	Skovsted 1941	—	O.W. Tropics
<i>storkii</i>		84	" "	—	Fiji
<i>waimeae</i>		84	" 1935	—	Hawaii

$x = 15$

<i>lepidospermus</i>		30	Medvedeva 1936	—	Trop. Africa
<i>pedunculatus</i>		30	" "	—	S. Africa

HIBISCUS (cont.)

$x = 17$

<i>parkeri</i>	34	Skovsted 1935	—	Madagascar
<i>solandra</i>	34	Medvedeva 1936	—	Trop. Asia, Africa
<i>vitifolius</i>	34 + 0-1B	Skovsted 1941	MT	Tropics

$x = 19$

<i>coccineus</i>	38	Skovsted 1935	H	S.E: U.S.A.
<i>grandiflorus</i>	38	" 1941	—	N. America
<i>lasiocarpus</i>	38	" "	—	?
<i>militaris</i>	38	Nakajima 1936	—	N. America
<i>palustris</i>	38	Medvedeva 1936	H	E: U.S.A.
<i>roseus</i>	38	Skovsted 1935, 1941	H	E: U.S.A. (nat. in France)

$x = 20$

<i>ludwigii</i>	40	Skovsted 1941	—	S. Africa
<i>lunariifolius</i>	40	" "	—	Trop. Asia & Afr.
<i>physaloides</i>	40	" "	T	E. Africa
<i>mutabilis</i> Cotton Rose	92 100	" "	HT	Burma, China
		Medvedeva 1936		
<i>calyphyllos</i>	80	Skovsted 1941	—	Mascarene Is.
<i>syriacus</i> Rose of Sharon	80	" "	H	E. Asia

$x = 39$

<i>ficulneus</i>	78	Skovsted 1941	—	Tr. Asia & Austr.
------------------	----	---------------	---	-------------------

HIBISCADELPHUS $x = 10$

species	40	Skovsted 1941	—	Hawaii
---------	----	---------------	---	--------

MODIOLA $x = 9$

<i>caroliniana</i>	18	Krapovickas 1949	—	S: U.S.A.
<i>multifida</i>	18	Skovsted 1941	H	W: N. & S. Amer.

CIENFUGOSIA (FUGOSIA) $x = ?$

<i>heterophylla</i>	20	Longley 1933	—	W.I., Tr. S. Amer.
<i>hildebrandtii</i>	22	Skovsted 1941	—	E. Trop. Africa
	26	Youngman 1931	—	

SIDALCEA $x = 10, 13$

<i>candida</i>	20 + 1B	Skovsted 1935	H	Rocky Mts.
<i>campestris</i>	20	Ford 1938	H	W: N. Amer.
<i>parviflora</i>	20 26	" "	H	S. Calif.
<i>malviflora</i> Checkerbloom		Davie 1935 Skovsted 1935	H	California

KITAIBELIA $x = 11$

<i>lindemuthi</i>	44	Skovsted 1935	H	<i>cult</i>
<i>vitifolia</i>	44	" "	H	E. Europe

MALOPE $x = 11$

<i>hispidia</i>	44	Skovsted 1935	—	Algeria
<i>trifida</i>	44, 50	" "	H	Spain, N. Africa

MALVASTRUM* $x = 12, 15, 16, 17, 21, 22$

<i>coromandelianum</i>	24	Skovsted 1935	—	Tropics
<i>scoparium</i>	24	" "	—	Trop. Amer.
<i>tricuspidatum</i>	24	" 1941	H	Australia

MALVASTRUM (cont.)

<i>limense</i>	30	Skovsted 1935	H	Peru
<i>peruvianum</i>	30	" "	—	Mexico
<i>greenmanianum</i>	32	" "	—	"
<i>fasciculatum</i> & 5 spp.	34	Webber 1936	H	California
<i>grossulariaefolium</i>	42	Skovsted 1935	—	S. Africa
<i>scabrum</i>	42	" 1941	—	Peru
<i>capense</i> False Mallow	44	" 1935	H	S. Africa

KOKIA $x = 12$

<i>dryarinoides</i>	24	Skovsted 1941	H	Hawaii
<i>rockii</i>	24	" "	—	"

GOSSYPIOIDES $x = 12$

<i>brevilanatum</i>	24	Hutchinson 1943	—	Madagascar
<i>kirkii</i>	24	Skovsted 1935	—	Trop. Africa

GOSSYPIUM $x = 13$

(i) Old World Wild Species

<i>areysianum</i>	26	Douwes 1953	—	S. Arabia
<i>anomalum</i> Wild O.W. Cotton	26	Skovsted 1935	T	Tr. & S.W. Africa
<i>somalense</i>	26	Douwes 1951	—	E. Trop. Africa
<i>stocksii</i> Wild Sind C.	26	Skovsted 1935	—	Sind, S.E. Arabia,
Arabian C.				Br. Somaliland
<i>sturtii</i> Wild Austr. Cotton	26	" "	H	C. & S. Australia
<i>triphylum</i>	26	Douwes 1953	—	S.W. Afr., Angola

(ii) New World Wild Species

<i>aridum</i> Wild N.W. Cotton	26*	Skovsted 1933	—	Mexico
<i>armorianum</i> Calif. Wild C.	26	" "	—	L. Calif.
<i>davidsonii</i>	26	" "	—	"
<i>gossypoides</i>	26	Brown & M. 1952	—	S. Mexico
<i>harknessii</i>	26	Webber 1934	—	L. Calif.
<i>klotzschianum</i>	26	Skovsted 1935	—	Galapagos
<i>raimondii</i>	26	Barducci & M. 1941	—	N. Peru
<i>thurberi</i>	26	Skovsted 1933	—	Ariz., Mexico
<i>trilobum</i>	26	" 1935	—	S. Mexico

(iii) Old World Cultivated Species

<i>arboreum</i> Asiatic Tree C.	26	Zaitzew 1927	T	Asia (<i>cult</i>)
	(52)	Stephens 1942		N.E. Afr., Madag.
<i>herbaceum</i> Broach Kappas	26	Zaitzew 1927	MT	Asia (<i>cult</i>)
	(39)	Skovsted 1933		
	(52)	Beasley 1940		
<i>v. africanum</i>	26	Webber 1934	—	S. Africa
<i>v. acerifolium</i>	26	Nikelajewa 1923	—	India, N.E. & C. Africa

(iv) New World Cultivated Species

<i>barbadense</i> Egyptian or Sea	52	Webber 1934	MT	Trop. S. Amer.
Island Cotton	(26)	Skovsted 1934a		& <i>cult</i>
	(104)	Beasley 1940		
<i>v. brasiliense</i> Chain C.	52	Webber 1934	T	E. Tr. S. Amer.
<i>v. darwinii</i> Galapagos C.	52	" "	T	Galapagos
<i>hirsutum</i> Upland Cotton	52	Zaitzew 1927	T	C. America
	(104)	Harland 1940		& <i>cult</i>
<i>tomentosum</i> Hawaiian C.	52	Skovsted 1933	T	Hawaii

SHANTZIA $x = 13$				
<i>garckeana</i>	26	Longley 1933	—	Trop. Africa
THESPESIA $x = 13$				
<i>populnea</i> Portia Tree	26	Youngman 1931	DSHTW	O.W. Tropics
(<i>macrophylla</i>)				
<i>rogersii</i>	26	Skovsted 1941	—	Trop. Africa
ANODA $x = 15$				
<i>cristata</i>	30	Ford 1938	—	Mexico
<i>hastata</i>	30, 60	Skovsted 1941	H	Mex., Peru
<i>wrightii</i>	c. 60	„ 1935	H	New Mexico
KOSTELETSKYA $x = 17$				
<i>hastata</i>	34	Skovsted 1941	—	India ?

133 MALPIGHIACEAE

STIGMAPHYLLON $x = 9$				
<i>ciliatum</i>	18	Snoad unp.	H	W. Indies
BANISTERIA $x = 10$				
<i>caapi</i> Caapi	20	Baldwin 1946b	M	Brazil

135 ERYTHROXYLACEAE

ERYTHROXYLON $x = 12$				
<i>coca</i> Cocaine Plant	24	Heitz 1929, EKJ*	M	Peru

136 EUPHORBIACEAE

SF1: CROTONOIDEAE

EUPHORBIA* $x = 6, 7, 8, 9, 10$ (Apomixis)				
$x = 6$				
<i>capitata</i>	12	Harrison, T. 1931	—	Tropics
<i>cereiformis</i>	{ 12	" "	H	S. Africa
	20	Perry 1943		
<i>dulcis</i>	{ 12	" "	—	Europe
	28 ?	Carano 1926		
<i>nutans (preslii)</i>	{ 12	D'Amato 1947b	—	N. America
	14	Perry 1943		
<i>welwitschii</i>	12	Harrison, T. 1931	—	Portugal
<i>pekinensis</i>	24	Perry 1943	—	China
$x = 7$				
<i>bivonae</i>	14	D'Amato 1947b	—	N. Afr., Sicily
<i>dentata</i>	14, 28, 56	Perry 1943	—	N. America
<i>pubescens</i>	{ 14	D'Amato 1947a	—	Medit.
	16	Perry 1943		
<i>commutata</i>	28	" "	—	N. America
<i>fulgens</i>	28	" "	H	Mexico

EUPHORBIA (cont.)

<i>geniculata</i>		28	Moyer 1934	—	Trop. Amer.
<i>graeca</i>		28	Perry 1943	—	Greece, Asia M.
<i>hypericifolia</i>		28	" "	—	Tropics
<i>ipecacuanha</i>	Ipecac Spurge	28	" "	H	N. America
<i>maculata</i>		28	" "	—	"
<i>corollata</i>	Flowering Spurge	{ 28	" "	—	"
		30	Harrison, T. 1931	—	"
<i>pitryusa</i>		28	Perry 1943	—	Medit.
<i>v. ovalifolia</i>		36	D'Amato 1939	—	"
<i>platyphyllos</i>		{ 28	Perry 1943	—	Eur., N. Africa
		36	Harrison 1930	—	"
<i>pulcherrima</i>	Poinsettia	28	Moyer 1934	H(V)	Mexico
<i>stricta</i>		28	Perry 1943	H	Eur., Medit., Cauc
<i>helioscopia</i>	Sun Spurge	42	" "	—	Eur., Medit.
<i>heterophylla</i>	Mex. Fire Pl.	56	Moyer 1943	HM	S. America
<i>iberica</i>		56	Perry 1943	—	Cauc.
<i>marginata</i>	Snow-on-the-Mountain	56	" "	H	N. America
$x = 8$					
<i>altissima</i>		16	Perry 1943	—	Asia M., Syria
<i>boetica</i>		16	" "	—	Spain
<i>gerardiana</i>		{ 16	" "	—	Europe
		18	Harrison, T. 1931	—	"
<i>lagascae</i>		16	Perry 1943	—	Sardinia
<i>paralias</i>	Sea Spurge	16	" "	—	W. Eur., Medit.
<i>peplus</i>	Petty Spurge	16	" "	—	Eur., Med., Siber.
<i>polychroma</i>	(epithymoides)	16	" "	H	E. Europe
<i>portlandica</i>	Portland Spurge	{ 16	" "	—	W. Europe
		40	Covas & S. 1947	—	"
<i>procera (pilosa)</i>		16	Perry 1943	H	Eur., N. Asia
<i>pterococca</i>		16	" "	—	Medit.
<i>segetalis</i>		16	" "	H	Europe
<i>exigua</i>	Dwarf Spurge	{ 16	Wulff 1939a	—	"
		24	Rutland 1941	—	"
		24-26	D'Amato 1947b	H	Eur., Medit.
		28	Perry 1943	—	"
<i>esula</i>		64	Reese 1952a	—	Eur., Tem. Asia
$x = 9$					
<i>amygdaloides</i>	Wood Spurge	18	D'Amato 1939	—	Eur., Cauc., Alg.
<i>dendroides</i>		18	" 1947	—	Medit.
<i>nicaeensis</i>		18	Perry 1943	—	"
<i>pilosa</i>	Hairy Spurge	18	" "	—	W. Eur., Algeria
<i>pinea</i>		18	Harrison, T. 1931	—	Medit.
<i>rothiana</i>		18	Perry 1943	—	India
<i>terraccina</i>		18	D'Amato 1947b	—	Medit.
<i>verrucosa</i>		18	Harrison 1930	—	Europe
<i>falcata</i>		36	D'Amato 1939	—	Med., Temp. Asia
<i>splendens</i>	Crown of Thorns	{ 36	Sugiura 1936a	H	Madagascar
		40	Harrison, T. 1931	—	"
$x = 10$					
<i>aphylla</i>		20	Perry 1943	H	Canary Is.
<i>biglandulosa</i>		20	" "	H	Greece, Asia M.
<i>bulbalina</i>		20	" "	—	S. Africa

EUPHORBIA (cont.)

<i>caput-medusae</i>	Medusa's Head	20	Perry 1943	H	S. Africa
<i>characias</i>		20	" "	—	Europe
<i>cereiformis</i>		20	" "	—	S. Africa
<i>clava</i>		20	" "	H	"
<i>cyparissias</i>	Cypress Spurge	20, 40	Moore & L. 1953	H	Europe
<i>glauca</i>		20	Perry 1943	—	New Zealand
<i>lathyrus</i>	Caper Spurge	20	" "	HV	S. Europe
<i>melapetala</i>		20	" "	—	Sicily
<i>meloformis</i>	Melon Spurge	20	" "	H	S. Africa
<i>micrantha (stricta)</i>		20	" "	H	Eur., Medit.
<i>monteiri</i>		20	" "	H	Trop. Africa
<i>myrsinites</i>		20	" "	H	S. Europe
<i>nubica</i>		20	" "	H	N. Africa
<i>obesa</i>		20	" "	H	S. Africa
<i>palustris</i>		20	" "	H	Europe
<i>regis-jubae</i>		20	" "	H	Teneriffe
<i>rigida</i>		20	Harrison, T. 1931	—	Greece, Asia M.
<i>schimperiana</i>		20	Perry 1943	H	Abyssinia
<i>tirucalli</i>	Milk Bush	20	Tjio 1948	M(Ru)	Trop. Africa, (India, <i>nat.</i>)
<i>royleana</i>		30	Bhalla 1941	H	Himalayas
<i>barnhartii (trigona)</i>	Susuru	40	" "	M	India, Moluc.
<i>bojeri</i>		40	D'Amato 1947b	H	Madagascar
<i>granulata</i>		40	Hagerup 1932	—	Trop. Afr. & Asia
<i>lactea</i>		40	Perry 1943	H	India
<i>similis</i>		40	" "	H	S. Africa
<i>albaspinia</i>		60	" "	H	<i>cult</i>
<i>hermentiana</i>		60	" "	H	S. Africa
<i>echinus</i>		c. 100	" "	H	Morocco
<i>ferox</i>		c. 200	" "	H	S. Africa

ACALYPHA $x=7$

<i>ostryaefolia (caroliniana)</i>		14	Perry 1943	—	N. America
<i>virginica</i>		28	" "	—	"
<i>wilkesiana (tricolor)</i>	Copper Leaf			H	S. Pacific Is.
<i>v. triumphans</i>		28	" "		
<i>v. musaica</i>		c. 2241	" "		
<i>fallax</i>		42	Banerji 1950b	—	Trop. Asia
<i>hispidia</i>	Chenille Plant	c. 112	Perry 1943	HM	E. Indies

BALIOSPERMUM $x=7$

<i>axillare (montanum)</i>		28	Perry 1943	M	Ind., Siam, Java
----------------------------	--	----	------------	---	------------------

SEBASTIANA $x=7$

<i>ligustrina</i>		56	Perry 1943	M	N. America
-------------------	--	----	------------	---	------------

CROTON $x=8$

<i>glandulosus</i>		16	Perry 1943	—	N. & Tr. Amer.
<i>monanthogynus</i>		16	" "	—	N. America
<i>palmeri</i>		16	" "	—	W: N. Amer.

MERCURIALIS $x=8$

<i>annua</i>	Annual M.	16, 32	Ehrenberg 1945	MV	Eur., N. Africa
<i>leiocarpa</i>		48	Morinaga <i>et al.</i> 1929	—	Japan
<i>perennis</i>	Dog's Mercury	c. 64	Meurman 1924	M	Eur., S.W. Asia, Cauc.

DAPHNIPHYLLUM $x=8$				
<i>macropodum</i>	32	Sugiura 1928a	H	China, Japan
COLLIGUAJA $x=9$				
<i>odorifera</i>	36	Perry 1943	—	Temp. S. Amer.
HEVEA $x=9$				
<i>pauciflora</i>	18, 36	Baldwin 1947a	—	Brazil
<i>brasiliensis</i> Para-rubber T.	36	Perry 1943	Ru	"
	(72, 144)	Mendes 1946		
<i>collina</i>	36	Ramaer 1935	Ru	"
<i>rigidifolia</i>	36	Baldwin 1947b	—	"
<i>spruceana</i>	36	Perry 1943	—	"
<i>guianensis</i>	36, 54	Baldwin 1947a	Ru	Guiana
HOMALANTHUS $x=9$				
<i>populneus</i>	36	Perry 1943	H	Trop. Asia
MANIHOT $x=9$				
<i>carthaginensis</i>	36	Tjio 1948	—	Trop. Amer.
<i>cathartica</i>	36	Doughty 1939	M	—
<i>dulcis</i> Sweet C.	36	" "	R	Brazil
<i>dichotoma</i> Tiquie-Man. R.	36	" "	Ru	"
<i>glaziovii</i> Ceara Rubber T.	36	" "	RuR	"
<i>palmata</i>	36	Bowden 1940a	R	"
<i>tweediana</i>	36	Perak 1940	—	"
<i>utilissima</i> Tapioca,	36	Graner 1935	R	"
(<i>esculenta</i>) Cassava	(72)	" 1942		
<i>walkerae</i>	36	Perry 1943	Ru	"
PEDILANTHUS $x=9$				
<i>lithymaloides</i> Redbird Cactus	36	Perry 1943	H	W. Indies
SAPIUM $x=9$				
<i>sebiferum</i> Soap Tree	36	Perry 1943	MO	Tropics
STILLINGIA $x=9$				
<i>sylvatica</i> Queen's Delight	36	Perry 1943	HM	N. America
MALLOTUS $x=9$				
<i>japonicus</i>	72	Perry 1943	DW	Japan
EREMOCARPUS $x=10$				
<i>setigerus</i>	20	Heiser & W. 1948	—	W: N. Amer.
RICINUS $x=10$				
<i>communis</i> Castor Oil Pl.	20	Hagerup 1932	Fo1MO	Tropics
	(40)	Sidorov & S. 1941		
<i>gibsoni</i>	20	Sugiura 1936b	O	"
<i>sanguineus</i> Red C.O.P.	20	" "	HO	"
<i>zanzibariensis</i>	20	Nemec 1910	HO	"
ALEURITES $x=11$				
<i>cordata</i> Tung (China	22	Lapin 1937b	O	China, Japan
Wood Oil T.)				
<i>fordii</i> " "	22	" "	O	China
<i>montana</i> " "	22	" "	IO	Trop. Asia

ALEURITES (cont.)					
<i>trisperma</i>		22	Stockar 1946	MO	Malaya
<i>moluccana</i>	Candle Nut	44	„ „	MO	„
<i>(triloba)</i>					
CHROZOPHORA $x=11$					
<i>plicata</i>	Indian Turnsole	22	Bhadhuri & K. 1949	D	India
GELONIUM $x=11$					
<i>multiflorum</i>		22	Banerji 1951	—	Trop. Asia
JATROPHA $x=11$					
<i>curcas</i>	Physic Nut	22	Perry 1943	MO	Tropics
<i>gossypifolia</i>	Wild Cassada	22	„ „	HM	Trop. Amer.
<i>multifida</i>	Pinhoeu Oil	22	„ „	HOM	„
TREWIA $x=11$					
<i>nudiflora</i>		22	Bhadhuri & K. 1949	—	India, Malaya
EXOCOECARIA $x=12$					
<i>acerifolia</i>		24	Perry 1943	MW	O.W. Tropics
SF2: PHYLLANTHOIDEAE					
PUTRANJIVA $x=7$					
<i>roxburghii</i>		14	Perry 1943	FoMO	Ind., Siam
BRIDELIA $x=7$					
<i>retusa</i>		28	Perry 1943	DFoW	Indo., Malaya
PHYLLANTHUS $x=7$					
<i>emblica</i>	Emblie	28	Perry 1943	DMVit	Trop. Asia
<i>carolinensis</i>		28	„ „	—	N. America
BREYNIA (PHYLLANTHUS) $x=7$					
<i>nivosa</i>	Snow Bush	56	Perry 1943	H	Pac. Is.
FLUGGEA $x=8$					
<i>obovata</i>		16	Perry 1943	F	Trop. Africa
HALLIOPHYTUM (BERNARDIA) $x=12$					
<i>fasciculatum</i>		24	Perry 1943	—	W: N. Amer.

Group IX

CUNONIALES

137-142

ST

ROSALES

143-145

HST

LEGUMINOSAE

146-148

HST



Vicia faba

137 CUNONIACEAE

PANCHERIA $x = 12$				
<i>sebertii</i>	24	Hamel 1952	—	New Caledonia
BAUERA $x = 16$				
<i>rubroides</i>	32	Smith-White unp.	H	E. Australia
CERATOPETALUM $x = 16$				
<i>gummiferum</i> Christmas Bush	32	Smith-White unp.	HW	E. Australia

139 ESCALLONIACEAE

ITEA $x = 11$				
<i>ilicifolia</i>	22	Bowden 1945b	H	China
<i>virginica</i> Sweet Spire	22	Schoennagel 1931	H	N. America
ESCALLONIA $x = 12$				
<i>macrantha</i>	24	Hamel 1949a	H	Chile
<i>rubra</i>	24	" "	H	"
<i>thyrsoides</i>	24	" "	—	"

141 GROSSULARIACEAE

RIBES * $x = 8$ (no natural polyploids)

S. 1. CURRANTS

<i>alpinum</i> Alpine C. & 1 sp.	16	Tischler 1927b	F	Eur., N. Asia
<i>aureum</i> Golden C.	16	Zielinski 1953	H	W: N. Amer.
<i>bracteosum</i> Calif. B.C.	16	" "	F	"
<i>cereum</i> Wax Currant	16	" "	H	"
<i>fasciculatum</i> Winterberry C.	16	K. Sax 1931b	H	China, Japan
<i>lacustre</i> Swamp C. & 25 spp.	16	Zielinski 1953	F	N. America
<i>nigrum</i> Black C.	16 (32)	Vaarama 1949a	DF	Eur., N. Asia, <i>cult</i>
<i>odoratum</i> Clove C. & 2 spp.	16	Meurman 1928	H	N. America
<i>sanguineum</i> Flowering C.	16	Zielinski 1953	H	W: N. Amer.
<i>saxatile</i> Siberian C.	16	Meurman 1928	F	Siberia
<i>spicatum</i> (<i>petraeum</i>)	16	Zielinski 1953	F	Eurasia
<i>sylvestre</i> Red & White C.	16	Meurman 1928	F	<i>cult</i>
<i>(rubrum v. sativum)</i>				

S. 2. GOOSEBERRIES

<i>cynosbati</i> Prickly G. & 1 sp.	16	K. Sax 1931b	F	W: N. Amer.
<i>divaricatum</i> Coast G.	16	Zielinski 1953	F	"
<i>grossularia</i> Gooseberry	16	Darlington 1929b	F	Eur., N. Afr., <i>cult</i>
<i>leptanthum</i> Trumpet G.	16	Meurman 1928	—	N. America
<i>niveum</i> & 25 spp.	16	Zielinski 1953	F	N.W: U.S.A.
<i>oxyacanthoides</i> Smooth G.	16	Darlington 1927	F	N. America
<i>setosum</i> Redshoot G.	16	Zielinski 1953	F	"

142 HYDRANGEACEAE

PHILADELPHUS * $x = 13$

<i>argyrocalyx</i>	26	Janaki Ammal 1951a	H	New Mexico
<i>californicus</i>	26	" " "	H	California
<i>confusus</i>	26	" " "	—	Washington

PHILADELPHUS (cont.)

<i>coronarius</i>	Sw. Mock Orange	26	Bangham 1929	H	S. Europe
<i>coulteri</i>		26	Janaki Ammal 1951a	H	Mexico
<i>delavayi</i>		26	Bangham 1929	H	W. China— S.E. Tibet
<i>hirsutus</i>		26	Janaki Ammal 1951a	H	S.E. U.S.A.
<i>'ncanus</i>	Grey M.O.	26	Bangham 1939	H	Hupeh
<i>inodorus</i> & 11 spp.		26	" "	H	S.E. U.S.A.
<i>laxus</i>		26	Janaki Ammal 1951a	H	"
<i>mexicanus</i>		26	" " "	H	Mexico
<i>schrenkii</i>		26	" " "	H	Manch.—Korea
<i>sericanthus</i>		26	" " "	H	S.W. China
<i>subcanus</i>		26	Bangham 1929	H	W. Szechuan
<i>v. wilsonii</i>		26	Janaki Ammal 1951a	H	Hupeh
<i>verrucosus</i>		26	" " "	—	Illinois
<i>virginalis</i>		26	Bangham 1929	H	<i>cult</i>
garden forms		26, 28, 39	Janaki Ammal 1951a	H	<i>cult</i>

DEUTZIA $x = 13$

<i>gracilis</i>		26	Schoennagel 1931	H	Japan
<i>hypoglaucia</i>		26	K. Sax 1931b	H	China
<i>purpurascens</i>	c. 26	" "	" "	H	W. China
<i>sieboldiana</i>		26	" "	H	Japan
<i>parviflora</i>		26	" "	H	China
<i>v. ovatifolia</i>		78	" "	"	"
<i>mollis</i>		78	" "	—	"
<i>discolor</i>		104	" "	—	C. China
<i>reflexa</i>		104	" "	—	China
<i>vilmorinae</i>		104	" "	H	"
<i>crenata</i> (<i>scabra</i>)		130	Schoennagel 1931	H	Japan, China
<i>schneideriana</i>		130	K. Sax 1931b	H	C. China

SCHIZOPHRAGMA $x = 14, 18$

<i>hydrangeoides</i>		28	M. & S. 1935	H	Japan
<i>integrifolium</i>		72	Hamel 1951b	H	China

JAMESIA $x = 16$

<i>americana</i>		32	K. Sax 1931b	H	W: N. Amer.
------------------	--	----	--------------	---	-------------

DEINANTHE $x = 17$

<i>coerulea</i>		34	Hamel 1951b	H	China
-----------------	--	----	-------------	---	-------

HYDRANGEA* $x = 18$

<i>arborescens</i> & 5 spp.		36	K. Sax 1931b	H	N. America
<i>virens</i>		36	Sugiura 1931	H	Japan
<i>paniculata</i>		36	M. & S. 1935	H	"
<i>v. floribunda</i>		72	Sugiura 1936a		
<i>v. praecox</i>		72	K. Sax 1931b		

143 ROSACEAE

SF1: ROSOIDEAE $x = 7, 8, 9$

ROSA $x = 7$

SUBGENUS 1: HULTHEMIA

<i>persica</i>		14	Täckholm 1922	H	Persia
----------------	--	----	---------------	---	--------

SUBGENUS 2: PLATYRHODON					
<i>roxburghii</i> (<i>microphylla</i>)	14	Täckholm 1922	H	China, Japan	
SUBGENUS 3: HESPERHODOS					
<i>stellata</i>	14	Erlanson 1932	H	Texas, Ariz.	
<i>v. mirifica</i>	14	" "	H	New Mexico	
<i>minutifolia</i>	14	" "	H	Calif.	
SUBGENUS 4: EUROSA					
S1: PIMPINELLIFOLIAE					
<i>ecae</i>	14	Täckholm 1922	H	Afghanistan	
<i>hugonis</i>	14	" "	H	C. China	
<i>koreana</i>	14	Wylie unp.	H	Korea	
<i>primula</i>	14	Erlanson 1938	H	C. Asia—N. China	
<i>sericea</i> (incl. <i>omeiensis</i>)	14	Täckholm 1922	H	W. China, Himal.	
<i>xanthina</i>	14	Hurst 1928	H	N. China, Korea	
<i>elasmacantha</i>	28	" unp.	—	Caucasus	
<i>foetida</i> (<i>lutea</i>) Austrian Briar	28	" 1928	H	W. Asia	
<i>v. bicolor</i> Austr. Copper	28	Täckholm 1922	H	<i>cult</i>	
<i>v. persiana</i> Persian Yellow	28	" "	H	<i>cult</i>	
<i>rapinii</i> (incl. <i>hemisphaerica</i>)	28	Hurst 1928	H	W. Asia	
Sulphur R.					
<i>spinosissima</i> (incl. <i>pimpinelli-</i>	28	Täckholm 1922	H	Eur., W. Asia	
<i>folia</i>) Scotch R., Burnet R					
<i>v. altaica</i>	28	Hurst 1928	H	Siberia	
<i>hispidula</i> { 28+1B	28	Täckholm 1922	H	<i>cult</i>	
<i>lutea</i> " "	28	" "	H	<i>cult</i>	
<i>luteola</i> " "	28	" "	H	<i>cult</i>	
<i>myriacantha</i>	28	Täckholm 1922	H	Spain, S. France	
S2: GALLICANAE					
<i>centifolia</i> Cabbage R.	28	Hurst 1928	HP	<i>cult</i> (Cauc.)	
<i>v. muscosa</i> Moss R.	28	Täckholm 1922	H	<i>cult</i>	
<i>damascena</i> Damask R.	28	" "	HP	<i>cult</i> (Asia M.)	
<i>gallica</i> French R.	28	" "	HMP	Eur., Cauc.	
<i>richardii</i> (<i>sancta</i>)	—		H	Abyssinia	
S3: CINNAMOMEAE					
(i) Old World					
<i>amblyotis</i>	14	Flory 1940	H	Kamchatka	
<i>banksiopsis</i>	14	Wylie unp.	H	W. China	
<i>beggeriana</i>	14	Täckholm 1922	H	Turkes.—N. Pers.	
<i>caudata</i> { 14	14	Flory 1940	H	W. China	
28	28	" 1950			
<i>cinnamomea</i> Cinnamon R.	14	Täckholm 1922	H	Eur., N. & W. Asia	
<i>corymbulosa</i>	14	Hurst 1928	H	W. China	
<i>davurica</i>	14	" "	H	N. China, N.E. As.	
<i>elegantula</i> (incl. <i>farreri</i>)	14	Täckholm 1922	H	W. China	
<i>elymaica</i>	14	" "	H	N. Persia	
<i>giraldii</i>	14	Hurst 1928	H	C. China	
<i>macrophylla</i>	14, 28	" "	H	Himalayas	
<i>marretii</i>	14	" "	H	Sakhalin	
<i>persetosa</i>	14	Täckholm 1922	H	W. China	
<i>prattii</i>	14	Wylie unp.	H	"	
<i>rugosa</i>	14	Täckholm 1922	FsH	N. Ch., Kor., Jap.	
<i>sertata</i>	14	" "	H	C. & W. China	

ROSA (cont.)

<i>webbiana</i>	14	Hurst 1928	H	Himal.—Turkest.
<i>willmottiae</i>	14	Täckholm 1922	H	W. China
<i>bella</i>	28	„ „	H	N. China
<i>davidi</i>	28	„ „	H	W. China
<i>fedtschenkoana</i>	28	„ „	HVit	Turkestan
<i>hawrana</i>	28	Hurst 1931	H	Hungary
<i>laxa</i> (Retz. non hort.)	28	Täckholm 1922	H	Turkestan
<i>multibracteata</i>	28	„ „	H	W. China
<i>pendulina</i> (alpina)	28	„ „	H	Alps
<i>saturata</i>	28	Hurst 1928	H	C. China
<i>setipoda</i>	28	Täckholm 1922	HVit	„
<i>hemsleyana</i>	42	„ „	HVit	„
<i>moyesii</i>	42	„ „	HVit	W. China
<i>v. fargesii</i>	28	Hurst 1928		
<i>v. rosea</i>	28	Täckholm 1922		
<i>sweginowii</i>	42	„ „	HVit	N.W. China
(ii) New World				
<i>blanda</i> (acicularioides, subblanda)	14 (21, 28)	Erlanson 1934	FsH	N.E: N. Amer.
<i>foliolosa</i>	14	Hurst 1928	H	S.E: U.S.A.
<i>gymnocarpa</i>	14	Täckholm 1922	H	W: N. Amer.
<i>nitida</i>	14	„ „	H	N.E: N. Amer.
<i>palustris</i>	14	Erlanson 1929	H	E: N. Amer.
<i>pisocarpa</i> (incl. <i>ultramontana</i>)	14, 21	„ 1933	H	N.W: N. Amer.
<i>woodsii</i> (incl. <i>fendleri</i> , <i>macounii</i> , <i>pyrifera</i> , <i>salictorum</i>)	14 + 0-2B, 21	„ „	H	W: N. Amer.
<i>arkansana</i> (incl. <i>subglauca</i> , <i>suffulta</i> , <i>pratincta</i>)	28	„ „	H	C: U.S.A.
<i>californica</i>	28	„ „	H	W: U.S.A.
<i>carolina</i> (incl. <i>deamii</i> , <i>humilis</i> , <i>lucida</i>)	28	„ „	H	E: N. Amer.
<i>durandii</i> (incl. <i>muriculata</i> , <i>myriadenia</i>)	28	„ 1934	H	W: N. Amer.
<i>rudiuscula</i>	28	„ 1929	H	E: U.S.A.
<i>virginiana</i>	28	Hurst 1928	H	N.E: N. Amer.
<i>nutkana</i> (incl. <i>melina</i> , <i>nuttalliana</i> , <i>oreophila</i> , <i>spaldingii</i>)	42	Täckholm 1922	HVit	N.W: N. Amer.
<i>manca</i>	42	„ „	HVit	W: N. Amer.
(iii) Circumpolar				
<i>acicularis</i>	42, 56	Täckholm 1922	HVit	Circumpolar
<i>as bourgeauiana</i> (sayi)	42	Erlanson 1929	H	N.W: N. Amer.
<i>engelmannii</i>	42	Hurst 1928	H	„
<i>lacorum</i>	42, 56	Erlanson 1929	H	„
<i>baicalensis</i>	56	Hurst	—	C. Asia
<i>fennica</i> (gmelinii)	56	Täckholm 1922	H	Sweden
<i>tackholmii</i>	56	„ „	—	„
S4: SYNSTYLAE				
<i>anemoneflora</i>	14	Täckholm 1922	H	E. China
<i>arvensis</i>	14	„ „	H	Europe
<i>brunonii</i>	14	Hurst 1928	H	Himalayas
<i>cerasocarpa</i>	14	Wylie unp.	H	C. China

ROSA (cont.)

<i>crocacantha</i>	14	Wylie unp.	H	W. China
<i>filipes</i>	14	" "	H	"
<i>helenae</i>	14	Täckholm 1922	H	C. China
<i>longicuspis</i>	14	Hurst 1928	H	Himal., W. China
<i>luciae</i>	14	" "	H	E. Asia
<i>maximowicziana</i>	14	Flory 1950	FsH	Manch., Korea
<i>moschata</i> Musk Rose	14	Täckholm 1922	HP	S. Eur., N. Africa
(incl. <i>abyssinica</i> , <i>leschenaultiana</i> , <i>nastarana</i> , <i>ruscinonensis</i>)				
<i>mulligani</i>	14	Wylie unp.	H	W. China
<i>multiflora</i>	14	Täckholm 1922	FsH	Japan, Korea
<i>phoenicia</i>	14	" "	—	Asia Minor
<i>rubus (ernestii)</i>	14	" "	H	C. & W. China
<i>sempervirens</i> Evergreen R.	14	" "	H	S. Eur., N. Africa
<i>setigera</i> Prairie Rose	14	" "	FsH	E: U.S.A.
<i>sinowilsonii</i>	14	Wylie unp.	H	W. China
<i>soulieana</i>	14	Hurst 1928	H	"
<i>watsoniana</i>	14	" "	H	<i>cult</i> (Japan)
<i>wichuraiana</i> Memorial R.	14	Täckholm 1922	H	E. Asia

S5: CHINENSES (INDICAE)

<i>chinensis</i> China R., Bengal R.	14, 21, 28	Hurst 1928	H	China, <i>cult</i>
<i>gigantea</i>	14	" "	H	S.W. China, Bur.
<i>odorata</i> Tea Rose	14	" "	FsH	<i>cult</i> (China)

S6: BANKSIANAE

<i>banksiae</i> Banksian R.	14	Täckholm 1922	H	China
<i>cymosa (microcarpa)</i>	14	Hurst 1928	H	"

S7: LAEVIGATAE

<i>laevigata</i> Cherokee R.	14	Hurst 1928	FsH	China (<i>nat.</i> N. Amer.)
------------------------------	----	------------	-----	----------------------------------

S8: BRACTEATAE

<i>bracteata</i> Macartney R.	14	Erlanson 1929	H	China
<i>clinophylla</i>	—	—	—	India

S9: CANINAE Dog Roses, with only 14 chromosomes paired (Täckholm 1922). Sub-sexual, $n = 7\sigma$; 21, 28, 35♀, with or without apomixis also.

<i>rubrifolia</i>	28	Täckholm 1922	H	S. & C. Eur.
<i>sherardi (omissa)</i>	28	Blackburn & H. 1921	Vit	N. & C. Europe
<i>villosa (mollis, pomifera)</i>	28	" "	HVit	Eur., W. Asia
<i>agrestis</i>	35	Täckholm 1922	—	Eur., N. Africa
<i>britzensis</i>	35	" "	—	Kurdistan
<i>canina</i> (s.l.) Dog Rose	35	" "	FsHVit	Europe
as <i>blondeana</i>	42	Gustafsson & H 1942		
<i>coriifolia (laxa)</i>	35	Täckholm 1922	FsHVit	Eur., W. Asia
<i>corymbifera (dumetorum)</i>	35	Blackburn & H. 1921	Vit	" "
<i>dumalis (glauca)</i>	35	Täckholm 1922	HVit	" "
<i>eglanteria</i> Sweet Briar	35	" "	FsHVit	Europe
(<i>rubiginosa</i>)				
<i>glutinosa</i>	35, 42	" "	H	S E. Eur., W. Asia
<i>horrida (ferox)</i>	35	" "	H	S.E. Eur., Cauc.
<i>inodora (elliptica, klukii)</i>	35, 42	Täckholm 1922	—	Europe
<i>micrantha</i>	35	Hurst 1928	Vit	"
<i>orientalis</i>	35	Wylie unp.	H	S.E. Eur., W. Asia

ROSA (cont.)

<i>seraphinii</i>	35	Täckholm 1922	H	Medit.
<i>sicula</i>	35	" "	H	S. Eur., N. Africa
<i>stylosa</i>	35, 42	" "	H	Europe
<i>tomentella</i>	35	" "	Vit	"
<i>tomentosa</i>	35	Blackburn & H. 1921	HVit	"
<i>chavini</i>	42	Täckholm 1922	—	Eur., Alps
<i>marginata (jundzillii)</i>	42	" "	—	Eur., W. Asia
<i>pouzini</i>	42	Hurst 1928	—	S. Eur., N. Africa

Cultivated Roses: 14, 21, 28 Wylie 1954
cf. Darlington 1955

FRAGARIA $x = 7$

<i>bracteata</i>	14	Yarnell 1931a	—	W: N. Amer.
<i>californica</i>	14	Ichijima 1930	—	California
<i>campestris</i>	14	Schiemann 1951	—	Europe
<i>maxima</i>	14	Ichijima 1930	—	—
<i>helleri</i>	14	" 1926	—	W: N. Amer.
<i>mexicana</i>	14	Yarnell 1931a	—	Mexico
<i>nilgerrensis</i> Nilgiri S.	14	" 1929	—	India
<i>vesca</i> Wood S.	14	Ichijima 1926	F	Temp. Reg.
<i>v. americana</i> Amer. S.	14	" "	F	E: N. Amer.
<i>viridis (collina)</i> Eur. S.	14	Darrow 1937	—	Eur., N. Asia
<i>nipponica</i> Jap. S.	{ 14	Lilienfeld 1936	F	Japan
	28	R. Yamazaki 1936	—	Asia
<i>moupinensis</i>	28	Schiemann 1951	—	—
<i>orientalis</i>	28	Fedorova 1946	—	"
<i>moschata (elatior)</i> Hautbois S.	42	Ichijima 1926	F	Europe
<i>chiloensis</i> Pine S.	56	" "	F	Alaska—Patag.
<i>cuneifolia</i> Rocky Mt. Wild S.	56	" "	F	W: N. Amer.
<i>glauca</i>	56	" 1930	F	N. America
<i>grandiflora</i> Garden S.	56	" 1926	F	cult
<i>ovalis</i>	56	Powers 1944	—	W: N. Amer.
<i>platyptala</i>	56	Yarnell 1931a	—	"
<i>virginiana</i> Scarlet S.	56	Ichijima 1926	F	E: N. Amer.

DUCHESNEA (FRAGARIA) $x = 7$

<i>indica</i> Mock S.	84	Ichijima 1926	H	Ind., China, Mala.
-----------------------	----	---------------	---	--------------------

NEURADA $x = 7$

<i>procumbens</i>	14	Hagerup 1932	—	N. Africa, India
-------------------	----	--------------	---	------------------

POTENTILLA* $x = 7$ (Polyploids Apomictic)

<i>arguta</i> & 2 spp.	14	Popoff 1935	H	N. America
<i>glandulosa</i>	14	Clausen <i>et al.</i> 1937	H	W: N. Amer.
<i>heptaphylla</i>	14	Rutishauser 1943	—	Europe
<i>argentea</i> { 14, 28, 35, 42	56	Müntzing 1941	H	N. Temp.
		Håkansson 1946	—	—
<i>fruticosa</i> { 14		Sax 1931a	—	N. America
	28	Turesson 1938	—	Europe
<i>sterilis</i> { 14		Shimotomai 1929	—	"
	28	Wulff 1938	—	—
<i>alba</i> & 4 spp.	28	Popoff 1935	H	Eur., Cauc.
<i>erecta</i> Tormentil	28	L. & L. 1948	M	Eur., N. Asia

POTENTILLA (cont.)

<i>pulchella</i>	28	L. & L. 1942	—	Greenland
<i>reptans</i>	28	Ehrenberg 1945	—	N. Temp.
<i>anserina</i> Silver Weed	28, 42	Erlandsson 1942b	HM	N. & S. Temp.
<i>crantzii</i> (<i>alpestris</i>)	28, 42	S. & S. 1941	H	Alps, Arctic
<i>recta</i>	{ 28 42	Popoff 1935 Shimotomai 1930	H	Eur., N. Asia
<i>egedii</i>	28, 35, 42	Erlandsson 1942b	—	N. Arct. & Temp.
<i>groenlandica</i>	28, 35, 42	" "	—	N. & Arctic
<i>arenaria</i>	28	Skalinska 1950a	—	N. Asia
× <i>verna</i> (apo. hybrids)	35, 42, 56	Rutishauser 1943		
	28	Håkansson 1946		
<i>tabernaemontani</i> (<i>verna</i>)	{ 42, 84 49	Müntzing 1941 L. & L. 1942	H	Europe
<i>canescens</i>	42	Rutishauser 1943	—	Switzerland
<i>nepalensis</i> & 15 spp.	42	Shimotomai 1930	H	Himalayas
<i>collina</i>	42, 70, 84	Müntzing 1931	—	Eur., Asia M.
<i>villosa</i>	42, 49	" "	—	C. Europe
<i>monspeliensis</i>	56	Löve 1954	H	N. America
<i>bifurca</i>	56	Popoff 1935	—	Cauc., N. Asia
<i>curdica</i>	56	" "	—	" "
<i>argyrophylla</i>	56, 63	" "	H	Himalayas
<i>atrosanguinea</i>	56, 63	" "	H	"
<i>chamissonis</i>	{ 56 77	Bøcher & L. 1950 L. & L. 1948	—	Arctic
<i>gracilis</i>	52-109	Clausen <i>et al.</i> 1940	H	W: N. Amer.
	56	Erlandsson, L. & L. 1942		
<i>nivea</i>	{ 63 70	Bøcher & L. 1950 Sakai 1934	H	Arctic & Alpine
<i>drummondii</i> & 4 spp.	64-108	Clausen <i>et al.</i> 1940	H	W: N. Amer.
<i>norvegica</i>	70	Gentcheff 1938	H	N. Eur.
<i>sibthorpiana</i>	98	Shimotomai 1930	—	Japan
<i>haematochroa</i>	112	" "	H	Mexico

COMARUM (POTENTILLA) $x=7$

<i>palustre</i> Marsh Cinquefoil	28	Ehrenberg 1945	H	N. Temp.
	42-64	S. & S. 1941		

SIBBALDIA (POTENTILLA) $x=7$

<i>procumbens</i>	{ 14 14	Bøcher 1938a S. & S. 1941	—	N. & S. Reg.
-------------------	------------	------------------------------	---	--------------

RUBUS* $x=7$ (Polyploids often Apomictic)

<i>allegheniensis</i> & 2 spp.	14	Einset 1947	F	E: N. Amer.
<i>arcticus</i> Arctic Bramble	14	Vaarama 1939	F	Arctic
<i>argutus</i> & 4 spp.	14	Longley 1924a	F	E: N. Amer.
<i>coreanus</i> Korean R.	14	Marks 1952	F	China, Korea
<i>gracilis</i>	14	" "	F	Asia
<i>hirsutus</i> & 7 spp.	14	Jinno 1951a, b	F	Japan
<i>kuntzeanus</i>	14	Darrow 1937	F	Asia
<i>lastostylus</i>	14	Longley & D. 1924	F	China
<i>laudatus</i> Kinoyer B. & 2 spp.	14	Yarnell 1931c, 1936	F	N. America
<i>leucodermis</i> White Bark R.	14	Darrow & L. 1333	F	W: N. Amer.
& 2 spp.				
<i>neglectus</i> Purple Cane R.	14	Crane & D. 1927	F	N. America
& 2 spp.				

RUBUS (cont.)

<i>xanthocarpus</i> & 3 spp.	14	Gustafsson '33, '43	F	China
<i>stellatus</i> & 9 spp.	14	Vaarama 1954	F	N. America
<i>canadensis</i> Thornless Mt. B.	{ 14 21	Longley 1924a Einset 1947	F	N. America
<i>idaeus</i> European Raspberry	14, 21, 28	Crane 1936	F	Eur., N. & S.W. Asia
<i>macrothyrsus</i>	14, 28	Maude 1939	—	Europe
<i>strigosus</i> Amer. Red R.	{ 14 21	Longley & D. 1924 Einset 1947	F	N. America
<i>ulmifolius</i> (<i>rusticanus</i>)	14, (28)	Heslop-Harrison '53	F	Europe
<i>avipes</i> & 5 spp.	21	Einset 1947	F	N. America
<i>deliciosus</i> Rocky Mt. R.	21	Longley 1924a	H	W: N. Amer.
<i>merceri</i> & 1 sp.	21	Christen 1950	—	Europe
<i>nigricans</i>	21	Longley 1924a	F	W: N. Amer.
<i>nitidus</i> & 4 spp.	21	Heslop-Harrison '53	H	Europe
<i>thyrsiflorus</i> & 2 spp.	21	Gustafsson 1939	H	"
<i>bellobatus</i>	21, 28	Einset 1947	—	N. America
<i>thyrsanthus</i>	{ 21 28	Gustafsson 1943 Heslop-Harrison 1953	—	Europe
<i>affinis</i>	28	" "	F	Eur., Himal.
<i>bifrons</i> & 2 spp.	28	Christen 1950	—	Europe
<i>bloxamii</i> & 3 spp.	28	Datta 1932	F	"
<i>lentiginosus</i>	28	Maude 1939	F	"
<i>nemorosus</i> Caucasian D.	28	Gustafsson 1933	F	"
<i>omeiensis</i> & 2 spp.	28	Marks 1952	F	China
<i>pennsylvanicus</i> & 5 spp.	28	Einset 1947	F	N. America
<i>procerus</i> Him. B. & 2 spp.	28	Crane 1936	F	"
<i>sachalinensis</i> Siberian R.	28	Rozanova 1939	F	N. Asia
<i>salteri</i>	28	Maude 1939	F	Europe
<i>sieboldii</i>	28	Jinno 1951a	F	Java
<i>tephrodes</i>	28	Vaarama 1954	—	E. Asia
100 spp.	28	{ Fabergé, M. 1939 Gustafsson 1942 Heslop-Harrison 1953		
<i>ambifarius</i>	28, 35, 42	Gustafsson 1939	—	Europe
<i>caesius</i> Eur. Dewberry	28, 35	Heslop-Harrison 1953	F	Eur., N. Asia
<i>balfourianus</i>	28, 35	" "	—	Europe
<i>bellardii</i>	{ 28 35	" " Gustafsson 1939	—	Eur.—Persia
<i>conjungens</i>	28, 35	Heslop-Harrison 1953	—	Europe
<i>hartmani</i> (<i>horridus</i>)	{ 28 35	Gustafsson 1942 Heslop-Harrison 1953	—	"
<i>infestus</i>	28, 42	Maude 1939	—	"
<i>formidabilis</i>	{ 28 35	" " Heslop-Harrison 1953	—	"
<i>granulatus</i> (<i>bloxamianus</i>)	{ 28 42	" " Maude 1939	—	"
<i>newbridgensis</i>	28, 35	Heslop-Harrison 1953	—	"
<i>nitidioides</i> Merton Early Bl.	{ 28 42	" " Maude 1939	F	England
<i>obcuneatus</i> (<i>cenomanensis</i>)	{ 28 35	" " Heslop-Harrison 1953	—	Europe

RUBUS (cont.)

<i>ostenfeldii</i>	28, 42, c. 44	Gustafsson 1939	—	Europe
<i>pyramidalis</i>	28, (42)	Heslop-Harrison 1953	—	"
<i>rosanthus</i>	28, 35	Gustafsson 1939	—	"
<i>magnificus (borreri)</i>	{ 28	Fabergé, M. 1939	F	"
	{ 42	Heslop-Harrison 1953	F	"
<i>idaeus</i> × <i>caesius</i>	28, 35, 42	Rozanova 1940a	F	expt.
<i>abactus</i> & 3 spp.	35	Einset 1947	—	N. Amer.
<i>corylifolius</i>	35	Datta 1932	F	Europe
<i>dumetorum</i> & 5 spp.	35	Marks 1952	—	"
<i>vestervicensis</i> & 4 spp.	35	Gustafsson '39, '42	F	"
<i>wiegandii</i>	36	Einset 1947	—	N. America
13 spp.	35	Heslop-Harrison 1953	—	Europe
<i>britannicus</i>	42	" "	—	"
<i>divergens</i> & 3 spp.	42	Gustafsson 1933	F	"
<i>loganobaccus</i> Loganberry	42	Thomas 1940	F	cult
<i>pectinellus</i>	42	Jinno 1951a	—	Japan
<i>meracus</i>	49	Einset 1947	—	N. America
<i>hispidus</i> Swamp Bl.	35, 56	Longley 1924a	F	"
<i>buergeri</i> & 2 spp.	56	Jinno 1951a, b	—	Japan
<i>chamaemorus</i> Cloudberry	56	Heslop-Harrison 1953	F	North & Arctic
<i>ursinus</i> Pacific D.	42, 56, 84	Gustafsson 1943	F	W: N. Amer.
<i>flagellaris</i>	63	Einset 1947	—	N. America
<i>plicatifolius</i>	63	" "	—	"
<i>lemurum</i>	84	S.W. Brown 1943	F	Cent. Calif.

WALDSTEINIA $x = 7$

<i>geoides</i>	14	Reese 1952a	H	E. Europe
----------------	----	-------------	---	-----------

AGRIMONIA $x = 7$

<i>eupatoria</i> Agrimony	28	Maude 1940	M	Europe
<i>odorata</i>	56	Wulff 1939b	—	Europe, W. Asia, N. Africa

GEUM* $x = 7$

<i>heterocarpum</i>	28	Gajewski 1949	H	Medit.
<i>montanum</i>	28	" "	H	S. Europe
<i>rhodopeum</i>	28	" "	—	Bulgaria
<i>coccineum</i> & 2 spp.	42	R. Yamazaki 1936	H	Chile
<i>macrophyllum</i> & 5 spp.	42	Gajewski 1949	H	N. Temp.
<i>rivale</i> Water Avens & 7 spp.	42	Raynor 1952	—	" "
<i>urbanum</i> Avens, Herb Bennet	42	" "	—	" "
<i>quellyon</i>	{ 42	" "	—	" "
	{ 70	Gajewski 1949	—	" "
<i>pyrenaicum</i>	56, 84	" "	H	Pyrenees
<i>magellanicum</i>	{ 84	" "	H	S: S. Amer.
	{ 84	Raynor 1952	H	

SANGUISORBA (POTERIUM) $x = 7$

<i>hakusanensis</i>	28	Sakai 1935	—	Japan
<i>minor</i> Salad Burnet	28	Lindenbein 1937	Sp	N. Temp.
<i>officinalis</i> Great B.	28	Nakajima 1936	H	Europe, N. Asia, N. America
<i>albiflora</i>	54?	M. & S. 1936	—	Japan

FILIPENDULA $x = 7, 8$

<i>ulmaria</i>	Meadowsweet	{ 14 16	Wulff 1938 Vaarama, L. & L. 1948	HM	Eur., N. Asia
<i>vulgaris</i>	Dropwort	{ 14 15!	Wulff 1938 Maude 1940	MR	" "

ALCHEMILLA $x = 8$ (All species Apomictic)

<i>glomerulans</i>		c. 64	Bøcher 1938a	—	Europe
<i>glabra</i> (<i>vulgaris</i>)		{ c. 90 c. 100	L. & L. 1942 Ehrenberg 1945	—	"
<i>vulgaris</i> s.l. Lady's Mantle		91-191	Gentscheff & G. 1940	H	Eurasia
<i>micans</i>		c. 93	Ehrenberg 1945	—	France, Switz.
<i>subcrenata</i>		c. 90, c. 96	L. & L. 1948	—	Europe
<i>acutiloba</i>		c. 100	Ehrenberg 1945	—	Eur., W. Asia
<i>monticola</i> (<i>pastoralis</i>)		101	" "	—	" "
<i>alpina</i>		c. 120	Gentscheff & G. 1940	—	Alps, N. Europe

APHANES (**ALCHEMILLA**) $x = 8$

<i>microcarpa</i>		16	Gudjonsson 1941	—	Spain
<i>arvensis</i>	Parsley Pier	{ 48 48, 50	" Gentscheff & G. 1940	—	N. Temp.

CERCOCARPOS $x = 9$

<i>betuloides</i>	Mt. Mahogany	18	Morley 1949	H	Calif.
-------------------	--------------	----	-------------	---	--------

DRYAS $x = 9$

<i>caucasica</i>		18	S. & S. 1940	—	Caucasus
<i>integrifolia</i>		18	Bøcher & L. 1950	H	N. Am., Greenld.
<i>octopetala</i>		18	Maude 1940	BH	North Reg.

KERRIA $x = 9$

<i>japonica</i>		18	Sugiura 1936b	H	C. & W. China
-----------------	--	----	---------------	---	---------------

RHODOTYPOS $x = 9$

<i>scandens</i>	Jet Bead	18	Sax 1932	H	Japan
-----------------	----------	----	----------	---	-------

SF2: PRUNOIDEAE $x = 8$

NUTTALLIA (**OSMARONIA**) $x = 8$

<i>cerasiformis</i>	Osoberry	16	Moffett 1931b	H	W: N. Amer.
---------------------	----------	----	---------------	---	-------------

MADDENIA $x = 8$

<i>hypoxantha</i>	Madden Cherry	32	Sax 1931a	—	China
-------------------	---------------	----	-----------	---	-------

PRINSEPIA $x = 8$

<i>uniflora</i>		32	Sax 1931a	—	Mongolia
-----------------	--	----	-----------	---	----------

PRUNUS $x = 8$

S1: ALMONDS AND PEACHES

<i>amygdalus</i>	Almond	16	Darlington 1930	HNO	S.W. Asia
<i>fenzliana</i>		16	" "	H	Caucasus
<i>persica</i>	Peach, Nectarine	16	" "	FHO	W. China (<i>cult</i>)
<i>nana</i> (<i>tenella</i>)	Russian A.	16	Kobel 1928	HN	Eur., Siberia
<i>triloba</i>	Flowering A.	64	" "	H	China

S2: PLUMS

<i>allegghaniensis</i>	Allegheny P.	16	Sax 1931a	F	N.E: U.S.A.
<i>americana</i>	Goose P.	16	" "	F	"

PRUNUS (cont.)

<i>armeniaca</i>	Apricot	16	Darlington 1928	F	Caucasus
<i>hortulana</i>		16	Sax 1931a	F	C: U.S.A.
<i>maritima</i>	Bead P.	16	" "	F	E: U.S.A.
<i>nigra</i>	Canada P.	16	Kobel 1928	F	"
<i>triflora</i>	Jap. P.	16	Darlington 1930	F	China
as <i>salicina</i>		16	Weeks 1941		
<i>mume</i>	Jap. Apricot	16, 24	Okabe 1928	FF	Japan
<i>divaricata</i>	Myrobalan,	16, 17, 24	Rybin 1936	FFs	Caucasus
(<i>cerasifera</i>)	Cherry P.				
<i>caspica</i>		16	Kovalev 1939	F	Persia
<i>iranica</i>		16	" "	F	"
<i>media</i>		32	" "	F	"
<i>spinosa</i>	Sloe, Blackthorn	32	Darlington 1930	FW	Eur., N. Africa,
nat. hybrids		16, 24, 40, 48	Mather 1937		W. Asia
<i>insititia</i>	Damson	48	Darlington 1928	FFs	Eur., A. Minor
as <i>italica</i>		48	Kobel 1927		
<i>domestica</i>	European P.	48	Darlington 1930	F	cult
<i>divaricata</i> × <i>spinosa</i>		24, 48	Rybin 1936	F	Caucasus

S3: CHERRIES

<i>cerasoides (puddum)</i>		16	Okabe 1928	F	Himalayas
<i>crassipes</i>		16	" "	F	Japan
<i>glandulosa</i>	Almond C.	16	Sax 1931a	—	W: N. Amer.
<i>incana</i>	Underwood C.	16	" "	F	Caucasus
<i>japonica</i>		16	" "	F	Japan, China
<i>kurilensis</i>	Takane C.	16	Okabe 1928		Japan
<i>lannesiana</i>	Jap. Flower. C.	16	Darlington 1030	H	"
<i>mahaleb</i>	Mahaleb C.	16	" 1928	Fs	S. Europe, S.W. Asia
<i>mutabilis</i>	Jap. Flower. C.	16	Okabe 1928	F	Japan
<i>pumila</i>	Sand C.	16	Kobel 1928	F	N: U.S.A.
<i>sachalinensis</i>	Sargent C.	16	Okabe 1928	F	Japan
<i>subhirtella</i>	Higan C.	16	" "	F	"
<i>tomentosa</i>	Manchu C.	16	" "	F	E. Asia
<i>yedoensis</i>	Yoshino C.	16	" "	—	Japan
<i>incisa</i>	Fuji C.	16	Sax 1931a	F	"
as <i>itosakura</i>		16, 24	Okabe 1928		
<i>paniculata</i>	Jap. Fl. C.	16, 24	" "	FHP	"
(<i>serrulata</i>)					
as <i>pseudocerasus</i>	Yung fo	32	" "		
<i>avium</i>	Sweet C., Mazzard	16, 24, 32	Darlington 1928, 1933b	FHTo	Europe, S.W. Asia, cult
<i>cerasus</i>	Sour C., Morello	32	Darlington 1928	F	Eur., S.W. Asia
<i>cantabrigiensis</i>	Chin. Early C.	32	Crane & L. 1938	F	China
<i>fruticosa</i>	Ground C.	32	Darlington 1928	F	S. Eur., N. Asia

S4: BIRD CHERRIES

<i>grayana</i>	Jap. Choke C.	32	Okabe 1928	F	Japan
<i>padus</i>	Bird C., Hagberry	32	Kobel 1928	HF	Eur., N. Amer.
<i>serotina</i>	Capuli	32	" 1927	FMW	N. America
<i>ssiuri</i>	Sakhalin C.	32	Okabe 1928	F	Sakhalin
<i>virginiana</i>	Amer. Choke C.	32	Sax 1931a	F	N. America

S5: CHERRY LAURELS

<i>lusitanica</i>	Portugal L.	64	Almeida 1947a	H	Portugal
<i>laurocerasus</i>	Cherry Laurel c.	176	Meurman 1929	HMSp	S.W. Asia

SF3: SPIRAEOIDEAE: $x = 8, 9$

EXOCHORDA $x = 8$					
<i>giraldii</i>	Pearl Bush	16	Sax 1931a	H	China
PENTACTINA $x = 9$					
<i>rupicola</i>		18	Sax 1931a	—	Korea
PHYSOCARPUS (SPIRAEA) $x = 9$					
<i>capitatus</i>	Ninebark	18	Sax 1931a	H	W: N. Amer.
<i>intermedius</i>	"	18	" "	—	C: N. Amer.
<i>monogynus</i>	"	18	" "	H	N. America
<i>stellatus</i>	"	18	" "	—	W: N. Amer.
SIBIRAEA (SPIRAEA) $x = 9$					
<i>laevigata</i>		18	Sax 1931a	H	Siberia
SPIRAEA $x = 9$					
Old World Group					
<i>cana</i>		18	Sax 1936	H	S. Europe
<i>gemmata</i>		18	" "	H	China
<i>hypericifolia</i>		18	" "	H	S.E. Eur., T. Asia
<i>japonica</i>		18	" "	H	Him., Ch., Jap.
<i>media</i>		18	" "	H	E. Eur.—N.E. As.
<i>miyabei</i>		18	" "	H	Japan
<i>mollifolia</i>		18	" "	H	China
<i>nipponica</i>		18	" "	H	Japan
<i>prunifolia</i>		18	" "	H	Japan, China
<i>pubescens</i>		18	" "	H	China
<i>thunbergii</i>		18	" "	H	China, Japan
<i>chamaedryfolia</i>		18, 36	" "	H	N.E. Asia
<i>salicifolia</i>		36	" "	H	Eur.—Japan
<i>myrtilloides (virgata)</i>		54	" "	H	China
New World Group					
<i>corymbosa (3x)</i>		27	" "	H	E: N. Amer.
<i>alba</i>	White M.	36	" "	H	"
<i>douglasii</i>		36	" "	H	W: N. Amer.
<i>latifolia</i>	Meadowsweet	36	" "	HM	E: N. Amer.
<i>tomentosa</i>		36	Bowden 1945b	H	"

SF4: POMOIDEAE: $x = 17$

CHAENOMELES (CYDONIA, PYRUS) $x = 17$					
<i>cathayensis</i>		34	Moffett 1931a	FH	C. China
<i>japonica</i>		34	" "	H	Japan
<i>sinensis</i>	Chinese Quince	34	Sax 1931a	F	China
<i>speciosa (lagenaria)</i>	Jap. Quince	34	Moffett 1931a	FH	China, (Japan, cult)
CYDONIA $x = 17$					
<i>oblonga</i>	Quince	34	Moffett 1931a	FFsM	Turkestan, N. Persia cult
ERIOBOTRYA $x = 17$					
<i>japonica</i>	Loquat	34	Moffett 1931a	FH	Japan, China

MESPILUS $x = 17$					
<i>germanica</i> Medlar	34	Moffett 1931a	F	E. Eur., S.W. Asia	
OSTEOMELES $x = 17$					
<i>schwerinae</i>	34	Moffett 1931a	H	W. China	
PYRACANTHA $x = 17$					
<i>atalantioides</i> (<i>gibbsii</i>)	34	Moffett 1931a	H	China	
<i>coccinea</i> Fire Thorn	34	" "	H	S. Eur., Asia M.	
QUILLAJA $x = 17$					
<i>brasilensis</i>	34	Bowden 1945b	—	Brazil	
RAPHIOLEPIS $x = 17$					
<i>delacourii</i>	34	Moffett 1931b	H	<i>cult</i>	
<i>indica</i> Ind. Hawthorn	34	" "	FHM	S. China	
<i>umbellata</i> Yeddo H.	34	" "	H	Japan	
STRANVAESIA $x = 17$					
<i>davidiana</i>	34	Moffett 1931a	H	W. China	
AMELANCHIER $x = 17$					
<i>asiatica</i>	34	Sax 1931a	FH	E. Asia	
<i>humilis</i>	34	" "	F	N. America	
<i>oblongifolia</i> June Berry	34	" "	FH	E: N. Amer.	
<i>sanguinea</i>	34	" "	H	N. America	
<i>stolonifera</i>	{ 34	" "	FH	E: N. Amer.	
	68	Moffett 1931a			
<i>canadensis</i> Shad	68	" "	FH	"	
<i>laevis</i>	68	" "	FH	"	
<i>ovalis</i> (<i>rotundifolia</i>) Service B.	68	" "	F	C. & S. Europe	
<i>spicata</i>	68	Sax 1931a	H	<i>cult</i>	
ARONIA $x = 17$					
<i>hybrida</i>	34	Moffett 1931a	H	<i>cult</i>	
<i>melanocarpa</i> Black Chokeberry	34	" "	H	E: N. Amer.	
<i>arbutifolia</i> Red C.	{ 34	Sax 1931a	H	"	
	68	Moffett 1931a			
COTONEASTER* $x = 17$ (Polyploids Apomictic)					
<i>procumbens</i>	34	Moffett 1931a	H	?	
<i>congestus</i> (3x)	51	" "	H	Himalayas	
<i>bullatus</i>	68	" "	H	S.E. Tib.—W. Ch.	
<i>integerrimus</i> (<i>vulgaris</i>)	68	" "	—	Eur., N. Asia	
<i>microphyllus</i>	68	" "	H	Himalayas	
<i>acutifolius</i> & 23 spp.	34, 51, 68	H. J. Sax 1954	H	China	
CRATAEGUS $x = 17$					
<i>chlorosarca</i>	34	Moffett 1931a	H	Manchuria	
<i>lavaliei</i>	34	Sax 1931a	H	<i>cult</i>	
<i>oxyacantha</i> Hawthorn	34	Moffett 1931a	BFsW	Eur., Temp. Asia	
<i>stipulosa</i>	34	" "	H	Mexico	
<i>monogyna</i>	34	" "	—	Eur., Temp. Asia	
<i>v. cabulica</i> (3x)	51	" "			
<i>douglasii</i> (3x) Michigan H.	c. 51	Longley 1924b	F	Mich., W: N. Am.	
<i>intricata</i> Thicket H.	c. 51	" "	F	E: U.S.A.	

CRATAEGUS (cont.)

<i>apposita</i>	Delaware H.	68	Moffett 1931a	—	N. America
<i>cognata</i>		68	" "	H	"
<i>crus-galli</i>	Cockspur H.	68	" "	H	"
<i>pedicellata</i>	Ontario H.	68	" "	—	"
<i>pruinosa</i>	Frosted H.	68	" "	H	E: U.S.A.
<i>phaenopyrum</i>	Washington H.	(72)	" "	H	N. America

MALUS x = 17

<i>adstringens</i>	Crab Apple	34	Sax 1931a	F	<i>cult</i>
<i>asiatica</i>	Oriental C.	34	Köbel 1927	F	N. Asia
<i>baccata</i>	Siberian C.	34	Sax 1931a	FH	Himal., N. Asia
<i>floribunda</i>	Flowering C.	34	Darlington & M. '30	FH	China
<i>fusca</i>	Oregon C.	34	Nebel 1929	—	N. America
<i>halliana</i>		34	" "	FH	China, Japan
<i>ioensis</i>	Prairie C.	34	" "	FH	N. America
<i>niedzwetzkyana</i>		34	" "	FH	S.W. Sib., Cauc.
<i>zumi</i>	Zumi Crab	34	Rybin 1926	FH	Japan
<i>prunifolia</i>	Plum Leaf C.	34, 51	Nebel 1929	FH	N.E. Asia
<i>sylvestris</i>	Apple	34, 51	Darlington & M. '30	F	Afghan., <i>cult</i>
(<i>pumila</i>)	266 vars.	34	Einset & I. '47, '49,		
	18 vars.	51	Einset & L. '51		
	15 vars.	34/68	(chimaeras) "		
<i>angustifolia</i>	Southern C.	{ 34	Rybin 1926	F	N. America
		{ 68	Sax 1931a		
<i>coronaria</i>	American C.	51, 68	Dermen 1949	FH	"
<i>platycarpa</i>		{ 51	" "	FH	"
		{ 68	Lincoln & M. 1937		
<i>hupehensis</i>		51, 68	Dermen 1936c	FH	China
<i>lancifolia</i>		51, 68	" 1949	FH	N. America
<i>sargentii</i>		34, 68	Nebel 1930	FH	Japan
<i>glaucescens</i>		68	Sax 1931a	FH	E: N. Amer.
<i>sieboldii</i> (5x)		85	Olden 1945	FH	Japan

PYRUS x = 17

<i>aromatica</i>		34	Adati 1933	F	Japan
<i>betulifolia</i>		34	" "	FHV	China
<i>calleryana</i>	Callery P.	34	" "	F	Japan
<i>dimorphophylla</i>		34	" "	F	"
<i>eleagrifolia</i>	Oleaster P.	34	Rybin 1927	FH	Asia Minor
<i>fauriei</i>	Korean P.	34	Adati 1933	F	E. Asia
<i>hondoensis</i>		34	" "	F	Japan
<i>nivalis</i>	Snow P.	34	Rybin 1927	FH	N. Asia, Himal.
<i>phaeocarpa</i>		34	Adati 1933	FH	N. China
<i>pyrifolia</i>	Sand P.	34	" 1935	FH	Java
<i>salicifolia</i>		34	Köbel 1927	FH	Caucasus
<i>sohayakiensis</i>		34	Adati 1933	F	Japan
<i>ussuriensis</i>	Chinese P.	34	Rybin 1927	FH	China
<i>uyematsuana</i>		34	Adati 1933	F	<i>cult</i>
<i>communis</i>	Pear	34, 51	Darlington & M. '30	F	Afghan., <i>cult</i>
		34/68	Marks 1953		

PHOTINIA x = 17

<i>glabra</i>	Jap. Medlar	34	K. 1931	H	Japan
<i>villosa</i>		68	Moffett 1931a	H	China, Korea, Jap.

SORBUS (PYRUS) $x = 17$ (Apomixis, obligatory in triploids)

<i>alnifolia</i>		34	Sax 1931a	H	Japan, Korea
<i>americana</i>	American M.A.	34	" "	H	E: U.S.A.
<i>aria</i>	White Beam	34	Moffett 1931a	FH	C. & S. Europe
<i>aucuparia</i>	Rowan, Mt. Ash	34	" "	BFH	Eur., Asia Minor, N. Africa
<i>confusa</i>		34	Poucques 1951	—	?
<i>domestica</i>	Service Tree	34	Moffett 1931a	HW	Eur., N. Africa
<i>latifolia</i>		34	Poucques 1951	H	Europe
<i>torminalis</i>	Wild Service T.	34	Moffett 1931a	FH	S. & C. Europe
<i>bristoliensis</i>		51	Warburg 1952	—	W. England
<i>lancifolia</i>		51	Liljefors 1934	—	Norway
<i>minima</i>		51	Moffett 1931b	—	Wales
<i>mougeotii</i>		51	Liljefors 1934	H	C. Europe
<i>porrigentiformis</i>		51, 68	Warburg 1952	—	Wales, W. Eng.
<i>anglica</i>		68	" "	—	" "
<i>chamaemespilus</i>		68	Liljefors 1934	H	C. Europe
<i>decora</i>		68	Bøcher & L. 1950	H	E: U.S.A.
<i>eminens</i>		68	Warburg 1952	—	W. England
<i>hybrida (fennica)</i>		68	Liljefors 1934	H	N. Europe
<i>intermedia (suecica)</i>		68	" "	H	N.W. Europe
<i>leptophylla</i>		68	Warburg 1952	—	Wales
<i>meinichii</i>		68	Liljefors 1934	—	N. Europe
<i>obtusifolia (aria v. norvegica)</i>		68	" "	—	Scandinavia
<i>rupicola (salicifolia)</i>		68	" "	—	W. Europe
<i>sudetica</i>		68	" "	—	C. Europe

AMELASORBUS (AMELANCHIER \times SORBUS) $x = 17$

<i>jackii</i>		34	Sax & S. 1947	H	W: N. Amer.
---------------	--	----	---------------	---	-------------

SORBARONIA (SORBUS \times ARONIA) $x = 17$

<i>alpina</i>		34	Sax & S. 1947	H	<i>cult</i>
<i>dippelii</i>		34	" "	H	"
<i>jackii</i>		34	" "	H	"

145 CALYCANTHACEAE

CHIMONANTHUS $x = 11$

<i>fragrans</i>	Jap. Allspice, Winter Sweet	22	Sugiura 1931	HSp	Japan
-----------------	--------------------------------	----	--------------	-----	-------

CALYCANTHUS $x = 11$

<i>fertilis</i>		22	Sax 1933b	HSp	N. America
<i>occidentalis</i>	Cal. Allspice	22	Cave 1948a	HSp	California
<i>floridus</i>	Carolina All.	22	Sax 1933b	HSp	N. America
<i>v. ovatus</i> (3x)		33	" "	HSp	"

146 CAESALPINACEAE

CERCIS $x = 6, 7$

<i>canadensis</i>	Red Bud	12	Senn 1938	H(V)	E: N. Amer.
<i>occidentalis</i>		14	Atchison 1949a	H	S.W: N. Amer.
<i>siliquastrum</i>	Judas Tree	14	Corti 1930b	H(V)	S. Eur.—N. Persia

CASSIA $x = 6, 7, 8$ $x_2 = 13$

<i>auriculata</i>	Avarum	{ 14, 16 28	Jacob 1940 Pantulu 1942	DMMa	India
<i>chamaecrista</i> & 1 sp.		16	Senn 1938	—	S: U.S.A.
<i>dimidiata</i>		16	Sugiura 1931	—	Tropics
<i>mimosoides (leschenaultiana)</i>		16, 32, 48	Kawakami 1930	BMa	„
<i>alata</i>	Ringworm Plant	24	Senn 1938	M(Sh)	„
<i>antillana</i>		24	Atchison 1951	—	W. Indies
<i>atomarica</i>		c. 24	„	—	S. America
<i>egregia</i>		24	Covas & S. 1946	—	„
<i>fastuosa</i>		24	Atchison 1951	—	Trop. America
<i>nodosa</i>	Jointwood	24	„	ShMW	Trop. Asia
<i>renigera</i>		24	„	H	Upper Burma
<i>tomentosa</i>		24	Sugiura 1931	Ma	Trop. America
<i>fistula</i>	Ind. Laburnum	{ 24 28	Tischler 1922 Pantulu 1946	DHM	Trop. Asia
<i>sophera</i>		{ 24 28	Kawakami 1930 Pantulu 1948	H	O.W. Tropics
<i>obtusifolia</i>		26	Pantulu 1942	Ma(V)	Tropics
<i>splendida</i>		26, 52	Covas 1949b	H	Brazil
<i>occidentalis</i>	Nigger Coffee	{ 26 28	Muto 1929 Pantulu 1940	BMaV	Tropics
<i>tora</i>	Tavara	{ 26 28	Datta 1933b Jacob 1940	DMa(V)	„
<i>angustifolia</i>	Indian Senna	28	Sampath & R. 1949	M	India, Afr., Arabia
<i>corymbosa (floribunda)</i>		28	Atchison 1951	H	Argentina
<i>didymobotrya</i>		28	Sethi 1930	HMaSh	Abyssinia
<i>grandis</i>	Pink Shower	28	Atchison 1951	HM	Panama
<i>hirsuta</i>		{ 28 56	Frahm-Leliveld 1953 Sampath & R. 1949	H	Trop. America
<i>javanica</i>	Java Cassia	28	Ramanathan 1950	HShM	E. Indies
<i>marginata</i>	Red Cassia	28	Atchison 1951	DShW	Trop. Asia
<i>moschata</i>		28	„	—	Trop. America
<i>obtusata</i>		28	Ramanathan 1950	—	O.W. Tropics
<i>siamea</i>	Kassod Tree	28	Atchison 1951	DShVW	Mal., E. Indies
<i>torosa</i>		28	Nakajima	Ma	Tropics
<i>glauca</i>		28, 56	Pantulu 1942	H	Tr. Asia, Austral.

LYSIDICE $x = 8$

<i>rhodostegia</i>	16	Atchison 1951	—	S. China
--------------------	----	---------------	---	----------

SINODORA $x = 8$

<i>supa</i>	16	Atchison 1951	—	Philippines
-------------	----	---------------	---	-------------

TRACHYLOBIUM $x = 8$

<i>verrucosum</i>	Zanzibar Copal	16	Atchison 1951	Re	Trop. Africa
-------------------	----------------	----	---------------	----	--------------

PTEROGYNE $x = 10$

<i>nitens</i>	{ 20 20	Atchison 1941 Covas & S. 1947	—	Brazil
---------------	------------	----------------------------------	---	--------

AMBURANA $x = 11$

<i>cearensis</i>	22	Covas & S. 1947	W	Brazil
------------------	----	-----------------	---	--------

PHYLLOCARPUS $x = 11$					
<i>septentrionalis</i>		22	Atchison 1951	H	Guatemala
CAESALPINIA $x = 11, 12$					
<i>japonica</i>		22	Sakai 1951	H	Japan
<i>bahamensis</i>		24	Atchison 1951	—	W. Indies
<i>bonduc</i>	Nicker-Nut	24	" "	DHM	"
<i>coriaria</i>	Divi-divi	24	" "	DHW	Dry Trop. Amer.
<i>crista</i>	Wood Gossip	24	" "	DM	Tropics
<i>ferrea</i>		24	" "	—	Brazil
<i>floribunda</i>		24	Covas & S. 1947	—	"
<i>gilliesii</i>		24	" 1946	H	Argentina
<i>mexicana</i>		24	Atchison 1951	H	Mexico
<i>pauciflora</i>		24	" "	—	W. Indies
<i>paucijuga</i>		24	" "	—	"
<i>pulcherrima</i>	Peacock Flower	24	" "	HM	Tropics
<i>vesicaria</i>		24	" "	—	Cuba
<i>rubicunda</i>		24	Covas 1949b	—	Brazil
<i>sappan</i>	Sappan Wood	24	Ghose 1952	D	India, Malaya
AMHERSTIA $x = 12$					
<i>nobilis</i>	Tree of Heaven	24	Pantulu 1943	H	Burma
BROWNEA $x = 12$					
<i>coccinea (hybrida)</i>		24	Atchison 1951	HM	Venezuela
CERATONIA $x = 12$					
<i>siliqua</i>	Carob, Locust Bean	24	Almeida 1948	DFFoSh	S. Eur., S.W. Asia
COPAIFERA $x = 12$					
<i>officinalis</i>	Copaiba-Balsam, Maracaibo	24	Atchison 1951	ReW	Trop. S. Amer.
ERYTHROPHLOEUM $x = 12$					
<i>guineense</i>	Red Water Tree	24	Atchison 1951	H	Fr. W. Africa
HAEMATOKYLON $x = 12$					
<i>campechianum</i>	Logwood	24	Atchison 1951	DW	Trop. America
HOFFMANSEGGIA $x = 12$					
<i>andina</i>		24	Covas & S. 1946	—	Chile
<i>falcaria</i>		24	" "	--	Chile, Peru
HYMENAEA $x = 12$					
<i>courbaril</i>	Locust Tree Anime Resin	24	Atchison 1951	HReW	Tr. Amer., W. Ind.
INTSIA $x = 12$					
<i>africana</i>		24	Atchison 1951	—	Trop. Africa
<i>bijuga</i>		24	" "	MW	Pacific Is.
SARACA $x = 12$					
<i>declinata</i>		24	Atchison 1951	H	Sumatra
<i>indica</i>	Ashoka	24	" "	DHM	India, Burm., Cey.
<i>thaipingensis</i>		24	" "	—	Malaya
TAMARINDUS $x = 12$					
<i>indica</i>	Tamarind	24	Atchison 1951	FMW	Trop. Asia, Africa

BAUHINIA $x = 14$					
<i>acuminata</i>	28	Atchison 1951	HM	India, China, Mal.	
<i>galpini</i>	28	" "	H	Trop. & S. Africa	
<i>godefroyi</i>	28	" "	—	Cambodia	
<i>hookeri</i>	28	" "	—	Australia	
<i>macrostachya</i>	28	" "	—	Guiana	
<i>mollicella</i>	28	" "	—	Venezuela	
<i>purpurea</i>	28	" "	DH(V)	India, Bur., China	
<i>rufescens</i>	28	" "	—	S. Africa	
<i>saigonensis</i>	28	" "	—	Cochin China	
<i>tomentosa</i>	St. Thomas T.	28	" "	H	India
<i>variegata</i>	Mountain Ebony	28	" "	DHT(V)	India, China
<i>monandra</i>		42	Poucques 1945	—	Burma
COLVILLEA $x = 14$					
<i>racemosa</i>	28	Atchison 1951	H	Madagascar	
DELONIX (POINCIANA) $x = 14$					
<i>regia</i>	Flamboyante	$\left\{ \begin{array}{l} 24? \text{ Poucques 1945} \\ 28 \text{ Jacob 1940,} \\ 28 \text{ Atchison 1951} \end{array} \right.$	HShW	Madagascar	
DIALIUM $x = 14$					
<i>guineense</i>	28	Atchison 1951	W	W. Africa	
DIMORPHANDRA $x = 14$					
<i>mollis</i>	28	Covas 1949b	—	Brazil	
GLEDITSIA $x = 14$					
<i>amorphoides</i>	28	Atchison 1949a	—	Argentina	
<i>aquatica</i>	28	" "	H	S: N. Amer.	
<i>fera</i>	28	" 1951	—	China	
<i>heterophylla</i>	28	" 1949a	H	"	
<i>horrida</i>	28	" "	H	" Japan	
<i>sinensis</i>	28	" "	H	"	
<i>triacanthos</i>	Honey Locust	28	" 1947a	AH(Su)	E: N. Amer.
GYMNOCLADUS $x = 14$					
<i>dioica</i>	Kentucky Coffee T.	28	Atchison 1949a	HN	N. America
PARKINSONIA $x = 14$					
<i>aculeata</i>	Jerusalem Thorn, Cina-Cina	$\left\{ \begin{array}{l} 28 \text{ Pantulu 1942} \\ 28 \text{ Atchison 1951} \end{array} \right.$	HT	Trop. America	
PELTOPHORUM $x = 14$					
<i>inerme (ferrugineum)</i>		28	Atchison 1951	ShWH	Austr., Philip., Ceylon, Malaya

147 MIMOSACEAE

CALLIANDRA $x = 8$					
<i>hematocephala</i>	16	Atchison 1951	H	Brazil	
<i>inaequilatera</i>	16	„ 1949a	—	Bolivia	
ENTADA $x = 8?$					
<i>sudanica</i>	c. 16	Atchison 1951	FoMT	Trop. Africa	

SCHRANKIA $x = 8$				
<i>angustata</i>	16	Atchison 1949a	—	E: N. Amer.
<i>occidentalis</i>	24	Turner & B. 1953	—	America
ENTEROLOBIUM $x = 13$				
<i>contortisiliquum</i>	{ 26	Covas 1950c	—	Brazil
	26	Atchison 1951	—	
<i>cyclocarpum</i>	26	" "	—	Jamaica
<i>timbouva</i>	26	Tjio 1948	DW	Brazil
LYSILOMA $x = 13$				
<i>bahamensis</i>	26	Atchison 1951	—	Bahamas, Cuba
<i>divaricata</i>	26	" "	—	Mexico
<i>latisiliqua</i>	26	" "	W	Cuba
<i>tergemina</i>	26	" "	—	S. Mexico
PARKIA $x = 13$				
<i>biglandulosa</i>	26	Sampath & R. 1949	H	Malaya
PIPTADENIA $x = 13$				
<i>macrocarpa</i>	26	Atchison 1951	H	Brazil, Bolivia
SIDEROCARPUS $x = 13$				
<i>flexicaulis</i>	26	Atchison 1951	—	Texas, Mexico
ACACIA $x = 13$				
(i) American Group				
<i>aroma</i>	26	Atchison 1948	—	S. America
<i>bonariensis</i>	26	" "	—	Argentina
<i>cavenia</i>	26	" "	—	Chile
<i>chloriophylla</i>	26	" "	—	Bahamas
<i>curvifructa</i>	26	Covas 1950c	—	S. America
<i>furcata</i>	26	Covas & S. 1946	—	"
<i>macracantha</i>	26	Atchison 1948	—	"
<i>moniliformis</i>	26	" "	—	Argentina
<i>tenuifolia</i>	26	" "	—	W. I., S. Amer.
<i>tortuosa</i>	26	" "	—	S. Amer., Galap.
<i>villosa</i>	26	" "	—	Jamaica
<i>visco</i>	26	Covas & S. 1947	—	Argentina
(ii) Australian & Pacific Island Group				
<i>alata</i>	26	Covas & S. 1946	—	W. Australia
<i>armata</i> Kangaroo Thorn	26	" "	Sb	Australia
<i>auriculaeformis</i>	26	Atchison 1948	—	"
<i>baileyana</i> Cootamundra Wattle	26	" "	HW	N.S.W.
<i>calamifolia</i>	26	Chevalier 1945	—	Australia
<i>cultriformis</i>	26	" "	H	N.S.W.
<i>cyanophylla</i>	26	Atchison 1948	DW	W. Australia
<i>confusa</i>	26	" "	—	Philippines
<i>dealbata</i> Silver Wattle	26	" "	DHW	Australia
<i>decurrens</i> Black Wattle	26	" "	DW	"
<i>dermatophylla</i>	26	" "	—	"
<i>falcata</i>	26	Tjio 1948	W	"
<i>glaucoptera</i>	26	" "	—	"
<i>graveolens</i>	26	" "	—	"
<i>longifolia</i> Sydney Golden W.	26	Atchison 1948	H	"
<i>melanoxyton</i> Austr. Blackwood	26	" "	HW	"
<i>mollissima</i> Green Wattle	26	" "	DW	"

ACACIA (cont.)

<i>penninervis</i>	Mt. Hickory W.	26	Tjio 1948	H	Australia
<i>podalyrifolia</i>	Q'land Silver W.	26	Atchison 1948	H	"
<i>retinodes</i>		26	Tjio 1948	—	"
<i>richii</i>		26	Atchison 1948	—	Fiji Is.
<i>rubida</i>		26	Chevalier 1945	—	Australia
<i>saligna</i>		26	Atchison 1948	—	W. Australia
<i>verticillata</i>		26	Tjio 1948	—	Australia
<i>xylocarpa</i>		26	" "	—	N. Australia
<i>koa</i>		{ 52	Atchison 1948	W	Hawaii
		{ 52	Tjio 1948		

(iii) Asiatic & African Group

<i>albida</i>	Winter Thorn	26	Atchison 1948	DFoMW	N. Africa
<i>catechu</i>	Catechu	26	" "	DMW	India, E. Indies
<i>detinens</i>		26	" "	—	S. Africa
<i>mellifera</i>		26	Khan 1951	T	India
<i>modesta</i>		26	" "	—	"
<i>senegal</i>	Gum Arabic	26	" "	FoTM	Trop. Africa
<i>suma</i>	Cutch	26	Atchison 1948	DMW	S.E. Asia
<i>sundra</i>		26	" "	—	"
<i>senegal</i> × <i>mellifera</i>		39	Khan 1951	—	<i>nat. hybrid</i>
<i>arabica</i>	Babul, Gum Arabic	52	Atchison 1948	FoDMW	Trop. Afr. & Asia
<i>eburnea</i>	Ivory Acacia	52	" "	W	India
<i>horrida</i>	All Thorn	52	" "	DW	Trop. & S. Africa
<i>laeta</i>		52	" "	—	Arabia, N. Africa
<i>nilotica</i>		52	" "	MWH	Trop. Afr. & Asia
<i>scorpioides</i>		52	" "	—	" " "
<i>seyal</i>		52	" "	FoM	Egypt
<i>spirocarpa</i>		52	" "	—	Trop. Africa
<i>xanthophloea</i>		52	" "	—	E. Trop. Africa

(iv) Cosmopolitan

<i>farnesiana</i>	Cassie	52	Atchison 1948	DHPW	Trop. & Sub-Trop.
-------------------	--------	----	---------------	------	-------------------

ALBIZZIA $x=13$

<i>gamblei</i>		26	Atchison 1951	—	India
<i>lebbekoides</i>		26	" "	—	Philippines
<i>lophantha</i>	Plum Acacia	26	Covas & S. 1946	FoSh	Australia
<i>neumannia</i>		26	" "	—	"
<i>odoratissima</i>	Black Siris	26	Atchison 1951	HW	India, Bur., Cey.
<i>procera</i>	White Siris	26	Covas & S. 1946	W	Trop. Asia & Aus.
<i>julibrissin</i>		{ 26	Sakai 1951	(B)HSh	Sub-Tr. Asia, Afr.
		{ 52	R. Yamazaki 1936		
<i>polyphylla</i>		104	Covas & S. 1946	—	Madagascar

ARTHROSAMANEA $x=13$

<i>polycephala</i>		26	Burkart 1949b	—	Argentina
<i>polyantha</i>		c. 52	" "	—	"

PITHECELLOBIUM (PITHECOLOBIUM $x=13$

<i>brevifolium</i>		26	Atchison 1951	—	Mexico
<i>dulce</i>	Madras Thorn	26	Sampath & R. 1949	DFoH	Trop. America
<i>guadelupensis</i>		26	Atchison 1951	—	W. Indies
<i>saman</i>	Rain Tree	{ 26	" "	FoSh	Trop. America
		{ 26	Simmonds 1954		

PITHECELLOBIUM (cont.)

<i>scalare</i>	{ 26	Covas 1950c	—	Argentina
	26	Atchison 1951	—	
<i>polycephalum</i>	52	„ „	—	Trop. America

LEUCAENA x = 13

<i>glauc</i>	{ 104	Tjio 1948	BDFoMaVW	Trop. America
	104	Sampath & R. 1949		

MIMOSA x = 13, 14

<i>bimucronata</i>	26	Covas & S. 1947	—	Brazil
<i>invis</i>	{ 24	Frahm-Leliveld 1953	—	„
	26	Tjio 1948	—	
<i>biuncifera</i>	52	„ „	—	Mexico
<i>pudica</i> Sensitive Plant	52	„ „	FoHM	Brazil
<i>ephedroides</i>	28	Covas & S. 1946	—	Chile
<i>hamata</i>	40?	Dnyansagar 1951	—	India

PROSOPIS x = 13?, 14

<i>juliflora</i> Mesquite	{ 26	Ramanathan 1950		
	52	Sampath & R. 1949	AFoRe	Trop. America
	56	Atchison 1951		
<i>alba</i>	28	Covas & S. 1947	FW	Argentina
<i>alpataco</i>	28	„ „	—	Chile
<i>argentina</i>	28	„ 1946	—	Argentina
<i>campestris</i>	28	„ 1947	—	„
<i>chilensis</i> Algarrabo	28	„ „	Re	S. America
<i>ferox</i>	28	„ „	—	Argentina
<i>ruizleali</i>	28	„ „	—	„
<i>ruscifolia</i>	28	Covas 1950c	FoM	„
<i>strombulifera</i>	28	Schnack & C. 1947	—	S. America
<i>striata</i> 28, 56, c. 112		Castronovo 1945	—	Pagatonia

DESMANTHUS* x = 14

<i>acuminatus</i> & 4 spp.	28	Turner & B. 1953	—	S: U.S.A.
----------------------------	----	------------------	---	-----------

NEPTUNIA x = (9) 18

<i>triquetra</i>	36	Dnyansagar 1952	—	India
<i>plena</i>	c. 72	Frahm-Leliveld 1953	H	N. & S. America, Trop. As., Aust.

DICHROSTACHYS x = 14

<i>glomerata</i>	56	Atchison 1951	FoHMTToW	Trop. Africa
------------------	----	---------------	----------	--------------

148 PAPILIONACEAE

Order of the Tribes with their Basic Numbers

I	Vicieae: 5, 6, 7, 8	VI	Podalyrieae: 7, 8, 9
II	Hedysareae: 5, 6, 7, 8, 9, 11	VII	Genisteae: 7, 8, 9, 10, 11, 12
III	Loteae: 6, 7, 8	VIII	Sophoreae: 7, 8, 9, 10, 13
IV	Trifolieae: 6, 7, 8, 9	IX	Phaseoleae: 8, 10, 11, 12
V	Galegeae: 6, 7, 8, 9, 10, 11	X	Dalbergieae: 8, 10, 11, 12, 13

TRIBE I: VICIEAE

VICIA $x = 5, 6, 7$

$x = 5$ or 6

<i>amphicarpa</i>		{ 10 Sweschnikova '30, '40 —	Eur., W. As.
		12 Coutinho 1940 —	N. Africa
<i>lathyroides</i>	Spring Vetch	{ 10 Sweschnikova 1927a —	Eur., Asia Minor
		12 Heitz 1931a —	N. Africa
<i>macrocarpa</i>		{ 10 " " —	S. Europe
		12 Coutinho 1940 —	

$x = 6$

<i>ambigua</i>		12 Coutinho 1945 —	Eur., S.W. Asia, N. Africa
<i>angustifolia</i>	Narrowleaf Vetch	12 Sweschnikova 1927a Fo	" "
<i>ferruginea</i>		12 Coutinho 1945 —	?
<i>grandiflora</i>		12 " " —	S. Eur., S.W. Asia
<i>hybrida</i>		12 Heitz 1931b —	Eur., Med.
<i>hyrcanica</i>		12 " " —	Caucasus
<i>michauxii</i>		12 Coutinho 1945 —	Syria, Persia
<i>orobus</i>	Upright V.	12 Heitz 1931b —	Europe
<i>pannonica</i>	Hungarian V.	12 " " Fo	S. Eur., Asia
<i>peregrina</i>		12 " " —	Medit., India
<i>pisiformis</i>	Pea Vetch	12 " " V	Europe
<i>amoena</i>		{ 12 Moriya & K. 1949b —	Siberia
		24 Sweschnikova 1927a —	
		12 Heitz 1931b —	
<i>unijuga</i>	Pair Vetch	{ 24 Sakamura, I. 1916 —	E. Asia
		36 Kawakami 1930 —	
<i>tenuifolia</i>	Marrachero	{ 24 Heitz 1931b FoV	Eur., S.W. & N. Asia
		24 Ryka 1954 —	

$x = 6$ or 7

<i>calcarata</i>	.	{ 12 Senn 1938 —	Medit., Persia
		14 Heitz 1931b —	
<i>faba</i>	Broad, Horse or Field Bean	{ 12 McLeish 1953 FoV	Medit., <i>cult</i>
		(24) Rybin 1939 —	Eur. strains
		12 Hirayoshi & M. 1952 —	Jap. strains
		14 " " " " —	
<i>sativa</i>	Common V. or Tare	{ 12 Sweschnikova 1940 GFo	Eur., N. Africa, W. Asia
		12 Sakai 1951 —	
		12, 14 Moriya & K. 1949b —	
		12, 14 Coutinho 1940, '45 —	
<i>cracca</i>	Cow Vetch	{ 12, 14, 28 Sweschnikova 1927b FoG	Eur., W. Asia, N. America
		14 Moriya & K. 1949b —	S. Poland
		14, 28 Ryka 1954 —	

$x = 7$

<i>articulata (monantha)</i>		14 Heitz 1931b MaFo	Medit.
<i>atropurpurea</i>	Purple Vetch	14 " " FoMa	Algeria
<i>aurantia</i>		14 " " —	Asia Minor
<i>bithynica</i>		14 " " —	Medit.
<i>calcarata</i>		14 " " —	Medit., Persia
<i>cassubica</i>		14 Wulff 1939b —	Europe
<i>dasycarpa</i>	Woolly Pod V.	14 Sweschnikova 1927a Fo	"
<i>disperma</i>		14 Heitz 1931b —	S. France
<i>dumetorum</i>	German Vetch	14 " " —	Europe, Siberia
<i>erviformis</i>		14 " " —	W. Medit.

VICIA (cont.)

<i>ervilia</i>	Bitter Vetch	14	Heitz 1931b	FoV	Eur., N. Africa Asia Minor
<i>gracilis</i>		14	Sweschnikova 1927a	—	Eur., Syria
<i>grandiflora</i>		14	Heitz 1931b	—	S. Eur., A. Minor
<i>hirsuta</i>	Hairy Vetch	14	" "	FoV	Eur., N. Afr., Asia
<i>lutea</i>	Yellow Vetch	14	" "	—	Med., Pers., A.M.
<i>monantha</i>	Bard Vetch	14	" "	FoG	Medit.
<i>musquinez</i>		14	" "	—	Europe
<i>narbonensis</i>	French Vetch	14	" "	FoV	Med., W. Asia
<i>picta</i>		14	Sweschnikova 1927a	—	Armenia
<i>pseudo-orobus</i>		14	Heitz 1931b	—	N. China
<i>pseudo-cracca</i>		14	Sweschnikova 1927a	—	Italy
<i>pyrenaica</i>	Pyrenees V.	14	Heitz 1931b	—	Pyrenees
<i>sepium</i>	Bush Vetch	14	" "	V	Eur., N. As., Him.
<i>serratifolia</i>		14	Senjaninova 1932	—	Med., S.W. Asia
<i>sicula</i>		14	Heitz 1931	—	Sicily
<i>sylvatica</i>	Wood Vetch	14	Sweschnikova 1927a	—	Europe
<i>tetrasperma</i>	Sparrow V.	14	" "	—	Eur., Medit.
<i>varia</i>		14	Senn 1938	—	Eur., W. Asia, N. Africa
<i>villosa</i>	Russian V.	14	" "	VFo	Russia
<i>alpestris</i>		28	Heitz 1931b	—	Cauc., A. Minor

LENS $x=7$

<i>esculenta</i>	Lentil	14	Heitz, T. 1927	G	<i>cult</i>
<i>v. microsperma</i>		14	Miranda 1931, EKJ		
<i>v. macrosperma</i>		14	" " "		

PISUM $x=7$

<i>abyssinicum</i>		14	Fedotov 1935	VG	Abyssinia
<i>elatus</i>		14	" "	VG	Med., S.W. Asia
<i>fulvum</i>		14	" "	—	A. Minor, Syria
<i>sativum</i>	Garden Pea	14	Sansome 1933	FoVG	<i>cult</i> , S.W. Asia

LATHYRUS* $x=7$

<i>angulatus</i>		14	Simonet 1932c	—	Europe
<i>annuus</i>		14	" "	—	Medit., S.W. Asia
<i>aphaca</i>	Yellow Vetchling	14	" "	G	Medit., W. Asia
<i>articulatus</i>		14	Senn 1938	—	W. Medit.
<i>cicera</i>	Lesser Chick P.	14	" "	G	Eur., S.W. Asia
<i>cirrhusus</i>		14	" "	—	Pyrenees
<i>clymenum</i>		14	" "	—	Medit.
<i>grandiflorus</i>	Everlasting P.	14	" "	H	Italy, Greece
<i>ensifolius</i>		14	" "	—	Europe
<i>heterophyllus</i>		14	" "	—	"
<i>latifolius</i>	Perennial P.	14	" "	H	"
<i>magellanicus</i>	Cape Horn P.	14	Melderis & V. 1931	G	Magellan
<i>montanus</i>	Heath P.	14	Scheerer 1940	—	Europe
<i>maritimus</i>	Sea Pea	14	Kawakami 1930	G	Eur., N. Asia
<i>(japonicus)</i>		14	Sakai 1951		
<i>niger</i>	Black Vetchling	14	Corti 1931b	—	Europe
<i>nlssolia</i>	Grass Vetchling	14	Simonet 1932c	—	Eur., S.W. Asia
<i>numidicus</i>		14	" "	—	Algeria
<i>ochrus</i>		14	" "	FoRG	Medit.
<i>pannonicus</i>		14	Melderis & V. 1931	—	S. Eur., Asia M.
<i>pisiformis</i>		14	Marks 1952	—	Europe
<i>pubescens</i>		14	Simonet 1932c	—	Chile

LATHYRUS (cont.)

<i>roseus</i>		14	Marks 1952	—	Europe
<i>rotundifolius</i>		14	Simonet 1932c	—	E. Eur., S.W. Asia
<i>sativus</i>	Grass Pea	14	Bhattacharjee 1955	FoG	N. Afr., W. Asia
<i>sessilifolius</i>	& 10 Spp.	14	Senn 1938	—	C: S. America
<i>sylvestris</i>	Flat Pea	14	Simonet 1932c	—	Europe
<i>sphaericus</i>		14	" "	—	S. Europe
<i>tingitanus</i>	Tangier P.	14	" "	Fo	W. Medit.
<i>tuberosus</i>	Earthnut P.	14	Fisk 1931	R	Europe, Asia
<i>vernus</i>	Spring Bitter V.	14	Melderis & V. 1931	—	Europe
<i>hirsutus</i>	Winter Vetch	14	Senn 1938	Fo	Eur., S.W. Asia
		(28)	Marks 1950		
<i>odoratus</i>	Sweet Pea	14	Simonet 1932c	HP	Sicily, <i>cult</i>
		(28)	Fabergé 1935		
<i>pratensis</i>		14	Melderis & V. 1931	Fo	Eur., Asia, N. Afr.
		28	Marks 1950		(England)
		14, 28	Larsen 1953		
<i>palustris</i>	Marsh Pea	14	Senn 1938	—	N. Hemis.
		42	Scheerer 1940		
<i>venosus</i>		28	Senn 1938	Fo	N. America

CICER $x=7, 8$

<i>soongaricum</i>		14	Iyengar 1939	G	N.W. Him.
<i>arietinum</i>	Chick Pea	16	Thomas & R. 1946	GFoV	India, W. Asia
		16, (32)	Milovidov 1932		
<i>as kabulicum</i>	Kabuli Gram	16	Iyengar 1936		
<i>pinnatifidum</i>		16	Tschechow, T. 1938	G	Mesop., Asia M.

TRIBE II: HEDYSAREAE

ADESMIA $x=5$

sp. aff. <i>trijuga</i>		10	Covas & S. 1946	—	Chile
<i>coronilloides</i>		20	" "	—	"
<i>fernandezii</i>		20	" "	—	"
<i>capricornu</i>		20	Covas 1949b	—	"
<i>trijuga</i>		20	" "	—	"
<i>uspallatensis</i>		20	" "	H	"
<i>bicolor</i>		20	Castronovo 1945	—	Argentina
sp. aff. <i>glanduligera</i>		20, 40	Covas 1949b	—	Chile
<i>remyana</i>		20	Krapovickas & K. '51	—	Argentina
<i>subterranea</i>		20	" "	—	"

CORONILLA $x=6$

<i>glauca</i> var. <i>pygmaea</i>		12	La Cour 1952	H	S. Europe
<i>glauca</i>		24	Atchison 1949a	—	
<i>varia</i>	Crown Vetch	24	Romanenko 1937	FoH	Europe

HIPPOCREPIS $x=7$

<i>multisiliquosa</i>		14	Lorenzo-Andreu & G. H 1950		Medit.
<i>comosa</i>	Horseshoe V.	28	Maude 1940	FoH	"

SCORPIURUS $x=7$

<i>vermiculatus</i>		14	Senn 1938	H	Medit.
<i>sulcatus</i>		{ 14, 28	" "	H	"
		28	Coutinho & R. 1945		

SCORPIURUS (cont.)

<i>muricatus</i>	28	Coutinho & R. 1945	—	Medit.
<i>subvillosus</i>	28	" "	—	"

HEDYSARUM $x = 7, 8$

<i>elongatum</i>	Sweet Vetch	14	Sakai 1934	Fo	Russia
<i>obscurum</i>		14	Reese 1952a	H	Europe, N. Asia
<i>coronarium</i>	Sulla S.V.	16	Lewitsky, T. 1937	FoH	S. Europe
<i>hedysaroides</i>		14	Favarger 1953	—	Arctic, Alps, Altai

ORNITHOPUS $x = 7$

<i>compressus</i>		14	Griesinger & K. 1939	—	Europe
<i>isthmocarpus</i>		14	" "	—	W. Medit.
<i>macrorhynchus</i>		14	" "	—	Europe
<i>perpusillus</i>	Birdsfoot	{ 14	Milovidov 1941	Fo	"
		{ 14	Maude 1940		
		{ 14	Romanenko 1937		
<i>sativus</i>	Serradella	{ 14	Griesinger & K. 1939	Fo	E. Europe
		{ 16?	Kawakami 1930		
		(56)	Klinkowski & G. 1939		

ONOBRYCHIS $x = 7, 8$

<i>arenaria</i>		14	Favarger 1953	—	Alps
<i>caput-galli</i>		14	Senn 1938	Fo	Medit.
<i>crista-galli</i>		{ 14	Corti 1931a	Fo	S.E. Medit.
		{ 16	Senn 1938		
<i>pulchella</i>		16	" "	Fo	Manchuria
<i>viciifolia (sativa)</i>	Sainfoin	{ 14	Romanenko 1937	Fo	cult
		{ 28	Maude 1939		
<i>montana</i>		28	Favarger 1953	—	S. Eur. Mtns.

LESPEDEZA $x = 9, 10, 11$

<i>homoloba</i>		18	Kawakami 1930	Fo	Japan
<i>sericea</i>		18	Cooper 1936	Fo	Himalaya
<i>sieboldii</i>		18	Kawakami 1930	FoH	Japan, Him.
<i>frutescens</i>		18, 20	Young 1940	—	N. America
<i>pilosa</i>		{ 18	Sakai 1951	—	Japan
		{ 20	Pierce 1939		
<i>variegata</i>		{ 18	Cooper 1936	—	Himal., N. Asia
		{ 20	Pierce 1939		
<i>bicolor</i>		{ 18	Kawakami 1930	FoH	Japan, China
		{ 22	Pierce 1939		
<i>cyrtobotrya</i>		{ 18	Kawakami 1930	Fo	Japan, Korea
		{ 22	Pierce 1939		
<i>daurica</i>		{ 36	Cooper 1936	—	Siberia
		{ c. 44	Pierce 1939		
<i>capitata</i>		20	Young 1940	—	N. America
<i>hirta (villosa)</i>		20	" "	—	"
<i>inschanica</i>		20	" "	—	China?
<i>procumbens (repens)</i>	Bush C.	20	" "	—	N. America
<i>repens</i>		20	" "	—	"
<i>simulata</i>		20	" "	—	"
<i>stipulacea (striata)</i>		20	Hanson 1953	—	Japan
<i>stuevei</i>		20	Young 1940	—	N. America

LESPEDEZA (cont.)				
<i>tomentosa</i> (villosa)	20	Cooper 1936	—	N. America
<i>virginica</i> (sessiliflora)	20	Young 1940	—	"
<i>floribunda</i>	22	Pierce 1939	—	China
<i>japonica</i>	22	" "	—	Japan
<i>striata</i> Japan C.	22	Young 1940	FoMa	"
<i>thunbergii</i>	22	" "	—	"
<i>virgata</i>	22	Pierce 1939	—	"
STYLOSANTHES $x = 10$				
<i>guianensis</i>	20	Kishore 1951	—	Guiana
<i>riparia</i>	20	Atchison 1949a	—	E: N. America
ZORNIA $x = 10$				
<i>bracteata</i>	20	Atchison 1949a	—	S.E: N. Amer.
ARACHIS $x = 10$				
<i>diogoi</i>	20	Mendes 1947	—	Brazil
<i>marginata</i>	20	" "	—	"
<i>villosa</i>	20	Krapovickas & R. '51	—	"
<i>villosulcarpa</i>	20	Mendes 1947	—	"
<i>prostrata</i>	{ 20	" "	O	"
	40	Husted 1933		"
<i>hypogaea</i> Groundnut	40	Frahm-Leliveld 1953	FoNO	" <i>cult</i>
<i>nambiquarae</i>	40	Husted 1933	O	"
<i>rasteiro</i> 40+0-1B		" "	O	"
<i>pusilla</i> 40 (80)		Krapovickas & R. '51	—	"
DESMODIUM* $x = 11$				
<i>bracteosum</i> & 9 spp.	22	Young 1940	Fo	N. America
<i>discolor</i>	22	" "	Fo	Brazil
<i>glabellum</i>	22	" "	Fo	N. America
<i>grandiflorum</i>	22	" "	Fo	India
<i>gyrans</i>	22	" "	Fo	Trop. Asia
<i>gyroides</i>	22	" "	MMa	S.E. Asia
<i>incanum</i>	22	" "	Fo	W. Indies
<i>strictum</i>	22	" "	Fo	Japan
<i>tortuosum</i> Beggarweed	22	" "	FoH	N. Amer., W. Ind.
<i>triquetrum</i>	22	" "	MMa	Trop. Asia
<i>leiocarpum</i>	22	Frahm-Leliveld 1953	—	Argentine
KUMMEROWIA $x = 11$				
<i>striata</i>	22	Sakai 1951	—	Japan
ORMOCARPUM $x = 12$				
<i>trichocarpum</i>	24	Atchison 1951	—	E. Africa
AESCHYNOMENE $x = 20$				
<i>indica</i> Pith Plant	40	Kawakami 1930	T	Tropics
TRIBE III: LOTEAE				
SECURIGERA $x = 6$				
<i>coronilla</i> Hatchet Vetch	12	Tschechow & K. '32a	H	S. Europe
ANTHYLLIS $x = 6, 7, 8$				
<i>alpestris</i>	12	Tschechow & K. '32a	—	C. Europe

ANTHYLLIS (cont.)

<i>maritima</i>		12	Tschechow & K. '32a	—	N. Europe
<i>vulneraria</i>	Kidney Vetch	12	Corti 1931a	FoH	Eur., W. As., Aby.
<i>barba jovis</i>		14	Tschechow & K. '32a	FoH	Medit.
<i>gerardii</i>		16	„ „ „	Fo	W. Medit.

LOTUS $x = 6, 7$

<i>angustissimus</i>		12, 24	Tschechow & K. '32a	Fo	Eur., N. Asia
<i>corniculatus</i>	Bird's Foot T.	24	Milovidov 1941	FoH	Temp. Eur. & As.
<i>v. tenuifolius</i>		12	Guinochet 1945		
<i>v. arvensis</i>		24	„ „		
<i>v. hirsutus</i>		24	„ „		
<i>uliginosus</i>		12	Dawson 1941	Fo	Eur., Medit.
		24	Milovidov 1941		
<i>hispidus</i>	Hairy Deer V.	24	Tschechow & K. '32a	Fo	Eur., N. Africa
<i>cytisoides</i>		14	„ „ „	Fo	Medit.
<i>edulis</i>		14	Senn 1938	Fo	„
<i>ornithopodioides</i>		14	Tschechow & K. '32a	Fo	„
<i>creticus</i>		28	„ „ „	Fo	„

TETRAGONOLOBUS (LOTUS) $x = 7$

<i>maritimus</i> (<i>L. siliquosus</i>)		14	Tarnavski 1938	—	Med., C. Europe
<i>purpureus</i>	Winged Pea	14	Tschechow & K. '32a	FoHV	Medit.

DORYCNium $x = 7$

<i>herbaceum</i>		14	Tschechow & K. '32a	H	S. Eur., Asia M.
<i>hirsutum</i>		14	„ „ „	H	Medit.
<i>rectum</i>		14	„ „ „	H	„
<i>suffruticosum</i>		14	„ „ „	H	C. & S. Europe

HYMENOCARPUS $x = 8$

<i>circinnatus</i>		16	Tschechow & K. '32a	—	Med.—Persia
--------------------	--	----	---------------------	---	-------------

TRIBE IV: TRIFOLIEAE

TRIFOLIUM $x = 6, 7, 8, 9$

		$x = 6, 8$			
<i>subterraneum</i>	Subterranean C.	12	Brock 1953	Fo	Israel
		16	„ „	Fo	Medit.
		$x = 7$			
<i>angustifolium</i>	Fineleaf C.	14	Karpechenko 1925	Fo	Eur., N. Africa
<i>arvense</i>	Rabbit Foot C.	14	„ „	Fo	O W. Temp.
<i>aureum</i>	Hop Clover	14	Wulff 1939b	Fo	Eur., Med.
(<i>agrarium</i>)					
<i>badium</i>		14	Bleier 1925	Fo	„
<i>campestre</i>	Mignonette C.	14	Karpechenko 1925	Fo	„
(<i>procumbens</i>)					
<i>filiforme</i>	Slender C.	14	„ „	Fo	Eur., Cauc.
(<i>micranthum</i>)					
<i>incarnatum</i>	Crimson C.	14	„ „	Fo	S.W. Eur., Alg.
<i>pratense</i>	Red Clover	14 (28)	Levan 1942a	Fo	Eur., W. As., Alg.
<i>spadiceum</i>		14	Karpechenko 1925	Fo	C. Eur., W. Asia
<i>squarrosus</i>		14	„ „	Fo	Med., W. Asia
<i>striatum</i>	Knotted C.	14	Wulff 1939a	Fo	S. Eur., A. Minor
		14	Karpechenko 1925		
<i>dubium</i> (<i>minus</i>)	Suckling C.	28	Bleier 1925	Fo	Europe
		16	Noda 1946		

TRIFOLIUM (cont.)

x = 8

<i>albopurpureum</i>		16	Wexelsen 1928	—	W: N. Amer.
<i>alexandrinum</i>	Beerseem	16	" "	Fo	N. Africa
<i>alpinum</i>		16	Favarger 1953	—	S.W. Eur. Mtns.
<i>alpestre</i>	Purple Globe C.	16	Karpechenko 1925	Fo	S. Eur., N. Asia
<i>fragiferum</i>	Strawberry C.	16	" "	Fo	Med., Abyssinia
<i>fucatum</i>	Puff Clover	16	Wexelsen 1928	Fo	W. : N. America
<i>glomeratum</i>	Cluster C.	16	" "	Fo	Med., W. Eur.
<i>hybridum</i>	Alsike C.	16	Kawakami 1930	Fo	S. Europe
<i>lappaceum</i>	Burdock C.	16	Karpechenko 1925	Fo	Med., S.W. Asia
<i>maritimum</i>		16	" "	Fo	" "
<i>microcephalum</i>		16	Wexelsen 1928	Fo	W: N. Amer.
<i>montanum</i>	Mountain C.	16	Karpechenko 1925	Fo	S. Eur., N. Asia
<i>obtusiflorum</i>	Soursalt C.	16	Wexelsen 1928	Fo	W: N. Amer.
<i>ochroleucon</i>		16	Bleier 1925	Fo	Eur., A. Minor
<i>reflexum</i>	Buffalo C.	16	Wexelsen 1928	Fo	N. America
<i>resupinatum</i>	Persian C.	16	Karpechenko 1925	Fo	Afghanistan
<i>rubens</i>		16	" "	Fo	C. & S. Europe
<i>scabrum</i>	Rough C.	16	" "	Fo	Med., W. America
<i>variegatum</i>	White Tip C.	16	Wexelsen 1928	Fo	W: N. Amer.
<i>thalii</i>		16	Bleier 1925	Fo	S., C. & W. Eur.
<i>tumens</i>		16	Karpechenko 1925	Fo	Cauc., Pers., Afgh.
<i>dichotomum</i>		32	Wexelsen 1928	Fo	N. America
<i>repens</i>	White or Dutch C.	{ 32, 48 (64)	Atwood & H. 1940 Moriya & K. 1949b Levan 1942a	Fo	Temp. O.W.
<i>lupinaster</i>		48	Karpechenko 1925	Fo	Japan, Korea
<i>wormskoeldii</i>	Sierra Clover	c. 48	Wexelsen 1928	Fo	W: N. Amer.
<i>medium</i>	Zigzag Clover	{ c. 84 c. 98 c. 126 c. 130	Levan, L. & L. 1942 Bleier 1925 L. & L. 1944b Wexelsen 1928	Fo	Eur., N. Amer.
<i>pannonicum</i>	Hungarian C.	{ c. 130 c. 180	Noda 1946 Tschechow 1930	Fo	Eur., S.W. Asia

MEDICAGO x = 7, 8

<i>hispida</i>	Tooth M., Bur C.	14	Fryer 1930	FoMa	S. Europe
<i>as denticulata</i>		16	Ghimpu 1930		
<i>rigidula</i>	Tifton Bur C.	{ 14 16	Fryer 1930 Ghimpu 1930	—	Europe
<i>arabica (maculata)</i>	Spotted Medick	16	" 1928	FoMa	W. & S. Europe
<i>carstiensis</i>		16	Fryer 1930	—	Europe
<i>ciliaris</i>		16	Ghimpu 1929b	Fo	Medit.
<i>disciformis</i>		16	" 1928	—	S. Eur., A. Minor
<i>echinus</i>		16	" "	—	Medit.
<i>gerardi</i>		16	" 1929b	—	Europe
<i>helix</i>		16	" "	—	Medit.
<i>intertexta</i>		16	Fryer 1930	—	S. Europe
<i>laciniata</i>		16	" "	—	Medit.
<i>littoralis</i>		16	" "	—	"
<i>marina</i>		16	Ghimpu 1929b	—	"
<i>minima</i>	Woolly Bur M.	16	" "	Fo	E. Europe
<i>murex</i>		16	Fryer 1930	—	Europe
<i>muricata</i>		16	" "	—	"
<i>nigra</i>		16	Ghimpu 1929b	—	N. Temp.
<i>oliviformis (turbinata)</i>		16	Tschechow 1933	Fo	Medit.

MEDICAGO (cont.)

<i>orbicularis</i>	Button C.	16	Fryer 1930	Fo	Medit., Abys.
<i>pentacycla</i>		16	Ghimpu 1929b	—	N. Temp.
<i>platycarpa</i>		16	Fryer 1930	Fo	Turkestan
<i>ruthenica</i>		16	" "	Fo	Siberia
<i>soleirolii</i>		16	" "	Fo	Italy
<i>sphaerocarpa</i>		16	Ghimpu 1928	Fo	Medit.
<i>tenoreana</i>		16	" "	Fo	Italy
<i>truncatula (tribuloides)</i>		16	" "	Fo	Europe
<i>tuberculata</i>		16	Tschechow 1933	Fo	Medit.
<i>turbinata</i>		16	" "	Fo	"

<i>lupulina</i>	Black M.	16, 32	" "	FoMa	N. Temp.
<i>falcata</i>	Yellow Lucerne	16, 32	Ledingham 1940	Fo	"
<i>arbores</i>	Tree Alfalfa	32	Ghimpu 1929b	Fo	Medit.
<i>hemicycla</i>		32	D. C. Cooper 1935b	Fo	Transcauc.
<i>media</i>	Sand Lucerne	32	Fryer 1930	Fo	Temp.
<i>ovalis</i>		32	Tschechow 1933	Fo	Spain
<i>rugosa</i>		32	Fryer 1930	Fo	Europe
<i>sativa</i>	Lucerne, Alfalfa	16, 32, 64	Bolton & G. 1950	FoMa	Persia, <i>cult</i>
		32	Fryer 1930		
<i>scutellata</i>	Snail Clover	32	Tomé 1947	Fo	Medit.
		32	Fryer 1930		

TRIGONELLA x = 8, 9, 11, 14

<i>balansae</i>		16	Tschechow 1933	Fo	Gr., Asia Minor
<i>besseriana</i>		16	Gardé 1948	—	E. Eur., A. Minor
<i>brachycarpa</i>		16	Tschechow 1933	—	Asia
<i>calliceras</i>		16	" "	—	Cauc.
<i>coerulea</i>	Curd Herb	16	Fryer 1930	SpV	W. Eur., Cauc.
<i>cretica</i>		16	Tschechow 1933	—	Medit.
<i>corniculata</i>	Piring Sak	16	" "	V	S.W. Asia
<i>foenum-graecum</i>	Fenugreek	16	Fryer 1930	GSpV	"
<i>gladiata</i>		16	Coutinho & S. 1943	—	Medit.
<i>glomerata</i>		16	Tschechow 1933	—	S.W. Asia
<i>lipskyi</i>		16	Gardé 1948	—	Bokhara
<i>monspeliaca</i>		16	" "	—	Medit.
<i>radiata</i>		16	Tschechow 1933	V	Asia M., Persia
<i>striata</i>		16	Gardé 1948	—	Asia M., Turkest.
<i>hamosa</i>		16, 44!	" "	—	Egypt
<i>ornithopodioides</i>		18	Rutland 1941	—	Europe
<i>polycerata</i>		28, 30, 32	Gardé 1948	Fo	Medit., S.W. Asia
<i>geminiflora</i>		44	" "	—	Asia Minor, Persia
<i>grandiflora</i>		44	" "	—	Turkestan

MELILOTUS x = 8

<i>alba</i>	Bokhara C.	16, 24 (32)	Atwood 1936	Fo	Eur., Asia
<i>altissima</i>		16	Scheerer 1939	Fo	" "
<i>dentata</i>		16	Tschechow 1933	Fo	Eur., E. Asia
<i>indica</i>	Sour C.	16	" "	FoMa	Medit.—India
<i>italica</i>		16	Clarke 1932	FoMa	Medit.
<i>messanensis</i>		16	" "	Fo	"
<i>neapolitana</i>		16	Tschechow 1933	Fo	Medit., Asia M.
<i>officinalis</i>	Sweet C.	16	" "	Fo	Eur., N. Asia
<i>segetalis</i>		16	Clarke 1932	Fo	Medit.
<i>speciosa</i>		16	" 1934	—	Algeria

MELILOTUS (cont.)

<i>suaveolens</i>	16	Tschechow 1933	Fo	N. China
<i>sulcata</i>	16	" "	Fo	Medit.
<i>taurica</i>	16	" "	Fo	"
<i>wolgica</i>	16	" "	Fo	Russia

PAROCHETUS $x=8$

<i>communis</i>	Shamrock Pea	16	Clarke 1934	H	Trop. Asia
-----------------	--------------	----	-------------	---	------------

ONONIS $x=(8, 15, 16)$

<i>tridentata</i>		30	Lorenzo-Andreu '51	—	Spain
<i>spinosa</i>	Rest Harrow	{ 32	Tschechow 1933	V	Eur., Medit.
		60	Senn 1938		
<i>alopecuroides</i>		{ 30	" "	—	Medit.
		32	Tschechow 1933		
<i>biflora</i>		32	" "	—	Algeria
<i>fruticosa</i>		32	" "	—	Europe
<i>natrix</i>		32	" "	H	S. Europe
<i>ornithopodioides</i>		32	" "	—	Medit.
<i>rotundifolia</i>		32	" "	—	C. Europe
<i>viscosa</i>		32	" "	Fo	S. Europe
<i>repens (arvensis)</i>		32	Reese 1952a	—	Eur., Siberia
<i>reclinata</i>		{ 60	Senn 1938	Fo	Medit.,
		64	Tschechow 1933		Abyssinia

TRIBE V: GALEGEAE

SESBANIA $x=6$

<i>aegyptiaca</i>	Sesban	{ 12	Rao 1946	HMMA	Egypt
		12	Haque 1946		
<i>macrocarpa</i>		12	Atchison 1949a	—	S.E.: N. Amer.
<i>punctata</i>		12	Frahm-Leliveld 1953	Ma	O.W. Tropics
<i>punicea</i>		12	Covas & S. 1947	—	Argentine
<i>speciosa</i>		12	Simmonds 1954	—	E. Trop. Africa
<i>tetraptera</i>		12	Senn 1938	Ma	Trop. Africa
<i>aculeata</i>	Dhencha	{ 12	Rao 1946	FoMaT	Tropics
(<i>bispinosa</i>)		24	Haque 1946		
<i>grandiflora</i>	Agathi	{ 24	Jacob 1941	DHM	Trop. Asia
Vegetable Humming Bird		24	Tjio 1948	MaShV	
<i>sericea</i>		24	Frahm-Leliveld 1953	Ma	W. Indies

INDIGOFERA $x=6, 7, 8$

<i>anil</i>	Indigo	12	Senn 1938	D	S. Trop. Asia
<i>parviflora</i>		14	Hagerup 1932	Ma	Tropics
<i>arrecta</i>	" Java I. "	16	Frahm-Leliveld 1953	DMA	Trop. Africa
<i>aspera</i>		16	Hagerup 1932	—	"
<i>diphylla</i>		16	" "	—	"
<i>dosua</i>		16	Sampath & A. 1949	—	Himal.
<i>hirsuta</i>		16	Frahm-Leliveld 1953	(D)Ma	Tropics
<i>kirilowi</i>		16	Kawakami 1930	Ma	China, Korea
<i>pseudotinctoria</i>		16	" "	DMA	Japan
<i>sumatrana</i>		16	Frahm-Leliveld 1953	—	Tropics
<i>tinctoria</i>	Ceylon I.	16	Ramanathan 1950	D	India, Ceylon
<i>viscosa</i>		16	Hagerup 1932	Ma	Trop. Africa, Ind.
<i>endecaphylla</i>		{ 32	Frahm-Leliveld 1953		
		32	Simmonds 1954	FoMa	O.W. Tropics
		36	Kishore 1951		
<i>sessiliflora</i>		32	Hagerup 1932	—	Trop. Africa

INDIGOFERA (<i>cont.</i>)						
<i>suffruticosa</i>	Am. Indigo	32	Kawakami 1930	DMa	S. America	
<i>teysmannii</i>		32	Atchison 1951	—	Trop. E. Asia	
<i>decora</i>		48	Tschechow 1930	—	China	
<i>gerardiana</i>		48	Kreuter 1930	D	Himalayas	
CYAMOPSIS $x=7$						
<i>psoraloides</i>	Cluster Bean	14	Frahm-Leliveld 1953	FoV	India	
DALEA $x=7$						
<i>alopecuroides</i>		14	Atchison 1949a		E: N. Amer.	
<i>occidentalis</i>		14	„ „		C. America	
GUELLENSTAEDTIA $x=7$						
<i>monophylla</i>		14	Tschechow 1935	—	Sib., Altai	
BISERRULA $x=8$						
<i>pelecinus</i>		16	Kreuter 1930	—	Med., Canaries	
CALOPHACA $x=8$						
<i>wolgarica</i>		16	Kreuter 1930	H	S. Russia, Turkest.	
CLIANTHUS $x=8$						
<i>puniceus</i>	Parrot's Bill	16	Tschechow 1935	H	New Zealand	
COLUTEA $x=8$						
<i>arborescens</i>	Bladder Senna	16	Tschechow 1930	H	Med., Asia Minor	
CRACCA $x=8$						
<i>species</i>		16	Wood 1949	—	N. America	
DIPHYSA $x=8$						
<i>robinoides</i>		16	Atchison 1951	—	C. America	
GALEGA* $x=8$						
<i>officinalis</i>	Goat's Rue & 3 spp.	16	Gardé & G. 1953	FoH	Eur., W. Asia	
GLYCYRRHIZA $x=8$						
<i>aspera</i>		16	Tschechow 1930	M	E. Eur., C. Asia	
<i>astragalina</i>		16	Covas & S. 1946	—	Chile	
<i>echinata</i>	Chinese L.	16	Senn 1938	M	E. Med., S. Rus.	
<i>glabra</i>	Liquorice Root	16	Tschechow 1935	M	Medit., Asia	
<i>lepidota</i>		16	Heiser & W. 1948	—	N. America	
<i>uralensis</i>	Chinese L.	16	Tschechow 1930	MSu	Siberia	
HALIMODENDRON $x=8$						
<i>argenteum</i>		16	Atchison 1949a	H	E. Asia	
PHACA (ASTRAGALUS) $x=8$						
<i>alpina</i>		16	Favarger 1949b	—	N. & Arctic	
SABINEA $x=8$						
<i>carinalis</i>		16	Atchison 1951	—	Dominica	
SPHINCTOSPERMUM $x=8$						
<i>constrictum</i>		16	Wood 1949	—	N. America	

WISTARIA (MILLETTIA) $x = 8$					
<i>floribunda</i>	Japanese W.	$\begin{cases} 16 \\ 24 (3x) \end{cases}$	Moriya & K. 1949b	H	Japan
<i>frutescens</i>		16	Matsuura 1937		
<i>macrostachya</i>		16	Kawakami 1930	H	S.E: U.S.A.
<i>sinensis</i>	Chinese W.	16	Roscoe 1927	H	C: U.S.A.
<i>venusta</i>	Silky W.	16	" "	H	China
					Japan
CARAGANA $x = 8$					
<i>arborescens</i>	Pea Tree	16	Tschechow 1930	H	Siberia, China
<i>frutex</i>		32	" "	H	S. Russia, Siberia
CARMICHAELIA $x = (8) 16$					
<i>kirkii</i>		32	Slade 1953	H	New Zealand
<i>monroi</i>		32	" "	H	"
<i>petriei</i>		32	" "	H	"
<i>williamsii</i>		32	" "	H	"
CHORDOSPARTIUM $x = (8) 16$					
<i>stevensoni</i>		32	Slade 1953	H	New Zealand
CORALLOSPARTIUM $x = (8) 16$					
<i>crassicaule</i>		32	Slade 1953	H	New Zealand
NOTOSPARTIUM $x = (8) 16$					
<i>carmichaeliae</i>		32	Slade 1953	H	New Zealand
SWAINSONA $x = (8) 16$					
<i>coronillaefolia</i>		32	Cooper 1936	H	Australia
OXYTROPIS $x = 8, 9$					
<i>montana</i>		16	Favarger 1953	—	Eur. Mtns.
<i>halleri (uralensis)</i>		16	Tschechow 1930	H	C. & E. Europe
<i>vaginata</i>		16	" "	—	Siberia
<i>lapponica</i>		48	" " 1935	—	Eur., N. Asia
<i>campestris</i>		36	Jalas, L. & L. 1948	—	N. Temp. & Arct.
<i>rishiriensis</i>		c. 53	Sakai 1934	—	Japan
MILLETTIA $x = 8, 10$					
<i>dasyphylla</i>		16	Toxopeus 1952	—	E. Indies
<i>thonningii</i>		16	Atchison 1951	Sh	Trop. Africa
<i>ovalifolia</i>		20	" "	—	Burma
ASTRAGALUS * $x = 8, 11, 12$					
$x = 8$					
<i>alopecuroides</i>		16	Kreuter 1930	H	Siberia
<i>alopencuros</i> & 24 spp.		16	Tschechow 1935	—	C. Asia
<i>candidissimus</i>		16	" "	—	Siberia, N. Amer.
<i>chinensis</i>		16	" "	H	China
<i>carolinianus (canadensis)</i>		16	" "	FoH	N. America
<i>danicus (hypoglottis)</i>		16	" "	FoH	Europe
<i>glycyphyllos</i>		16	" "	FoH	C. Eur., W. Asia
<i>incanus</i>		16	Lorenzo-A. & G. '50	H	S. France
<i>frigidus</i>		16	L. & L. 1944b	H	N. America
<i>sinicus</i>		16	Sugiura 1936b	H	China
<i>boeticus</i>	Swedish Coffee	16, 30	Tschechow 1935	BH	Medit.
<i>edulis</i>		28?	Kreuter 1930	Fo	Algeria

ASTRAGALUS (cont.)

<i>adsurgens</i>	32	Sakai 1935	FoH	E. Siberia, Japan
<i>bubaloceras</i>	32	Tschechow 1935	—	Morocco
<i>campylotrichus</i>	32	" "	—	Temp. Asia
<i>campylorhynchus</i>	36	" "	—	Asia M., Turkest.
<i>asper</i>	48	" "	—	S. Eur., Caucasus
<i>cornutus (vimineus)</i>	48	" "	—	E. Siberia
<i>hamosus</i>	48	" "	H(V)	Medit., N. Africa
<i>scorpioides</i>	48	" "	—	Spain
<i>alpinus</i>	c. 56	" "	—	N. Arct. & Temp.
<i>cicer</i>	64	" "	FoH	S. Europe
<i>echinus</i>	64	" "	H	Asia Minor
<i>mexicanus?</i>	64	" "	HV	Ill., Texas
<i>onobrychis</i>	64, 72	" "	H	Eur., W. Asia
<i>verus</i>	64	" "	—	Persia

brachylobus 96 " " — Caspian

x = 11, 12, 13 (New World)

<i>gambellianus</i>	22	James 1951	—	W: U.S.A.
<i>crassicaulus</i> & 12 spp.	22	Vilkommerson 1943	—	N. America
<i>grayi</i>	44	" "	—	W: N. America
<i>beathii</i> & 9 spp.	24	" "	—	N. America
<i>didymocarpus</i>	24	James 1951	—	California
sp.	26	Schnack & C. 1947	—	S. America
<i>garbancillo</i>	26	Krapovickas & K. '51	—	Argentina
aff. <i>joergensenii</i>	26	" "	—	"
<i>dispermus</i>	26	James 1951	—	S.W: U.S.A.

HEBESTIGMA *x* = 10

<i>cubense</i>	20	Atchison 1951	—	W. Indies
----------------	----	---------------	---	-----------

MUNDULEA *x* = 10, 11

<i>suberosa</i>	{ 20 22	Atchison 1951 Frahm-Leliveld 1953	Ma	India, Ceylon
-----------------	------------	--------------------------------------	----	---------------

PSORALEA *x* = 10

<i>bituminosa</i>	20	Kreuter 1930	H	Canaries
<i>glandulosa</i> Jesuits' Tea	20	" "	B	Chile, Peru
<i>macrostachya</i> Leather Root	20	" "	R	N. America

ROBINIA *x* = 10

<i>fertilis</i>	20	Whitaker 1934c	H	S.E: U.S.A.
<i>hartwigii</i>	20	" "	"	"
<i>kelseyi</i>	20	" "	H	N. Carolina
<i>luxurians</i>	20	" "	H	S.W: U.S.A.
<i>viscosa</i>	20	" "	H	S.E: U.S.A.
<i>pseudacacia</i> Black Locust	20	Kreuter 1930	H	E: U.S.A.
<i>boyntonii</i> (3x)	30	Whitaker 1934c	H	S.E: U.S.A.
<i>hispidula</i> (3x) Rose Acacia	30	" "	H	"

AMORPHA *x* = 10

<i>californica</i>	20	Kreuter 1930	H	California
<i>canescens</i> Lead Plant	20	Tschechow 1935	H	N. America

AMORPHA (<i>cont.</i>)					
<i>microphylla</i> (<i>nana</i>)	20	Tschechow 1935	H	C. & N. America	
<i>fruticosa</i> Bastard Indigo	40	„ 1930	DH	N. America	

GLIRICIDIA $x = 10, 11$					
<i>sepium</i> Madre	20	Atchison 1951	HSh	Trop. Amer.,	
	22	Simmonds 1954		<i>cult</i>	
<i>as maculata</i>	20	Sampath & R. 1949			

TEPHROSIA * $x = 11$ (12, 16?)					
<i>candida</i> Boga Medola	22	Simmonds 1954	HMa	Trop. Asia	
<i>grandiflora</i>	22	Woods 1949	H	S. Africa	
<i>noctiflora</i> (<i>hookeriana</i>)	22	Frahm-Leliveld 1953	Ma	Trop. Africa	
<i>vestita</i>	22	„ „	—	China, Sumatra	
<i>villosa</i>	22	„ „	—	Trop. Asia & Afr.	
<i>virginiana</i>	22	Woods 1949	H	N. America	
<i>vogelii</i> Igun	22	„ „	IMa	Trop. Africa	
<i>conzattii</i> 22+0-2B	22	„ „	—	N. America	
23 species	22	„ „			
<i>purpurea</i>	24	Ramanathan 1950	DMa	Trop. Africa	
<i>hookeriana</i>	32	Kawakami 1930	Ma	E. Indies	
<i>toxicaria</i> Yarro Conalli	—		Ma	Trop. Amer.	

TRIBE VI: PODALYRIEAE

PULTENAEA $x = 7, 8, 9$					
<i>gunnii</i>	14	Curtis 1952	H	Australia	
<i>daphnoides</i>	16	„ „	H	„	
<i>stricta</i>	16	„ „	H	„	
<i>tenuifolia</i>	16	„ „	H	„	
<i>juniperina</i> 18, 27, 36	„	„ „	H	„	

BAPTISIA $x = 9$					
<i>australis</i> Blue False Indigo	18	Tschechow 1931	H	S.E: U.S.A.	
<i>leucantha</i>	18	Atchison 1949a	H	„	
<i>sulphurea</i> Yellow False I.	18	Tschechow 1931	—	E: N. America	
<i>tinctoria</i> False Indigo	18	„ „	DHV	„	

PIPTANTHUS $x = 9$					
<i>laburnifolius</i> (<i>nepalensis</i>)	18	Tschechow 1931	H	Himalayas	

PODALYRIA $x = 9$					
<i>australis</i>	18	Atchison 1949a	—	S. Africa	

THERMOPSIS $x = 9$					
<i>alterniflora</i>	18	Tschechow 1931	—	Turkestan	
<i>montana</i>	18	„ „	H	W: N. America	

TRIBE VII: GENISTEAE

ROTHIA $x = 7$					
<i>trifoliata</i>	14	Rao 1950a	—	O.W. Tropics	

CROTALARIA * $x = 7, 8$					
<i>incana</i> Shack-Shack	14	Atchison 1950	Ma	Trop. America	
<i>alata</i>	16	Kawakami 1930	Ma	Trop. Asia	

CROTALARIA (cont.)

<i>anagyroides</i>	16	Kawakami 1930	Ma	Venezuela
<i>arenaria</i>	16	Hagerup 1932	Ma	Senegambia
<i>argyrea</i>	16	Senn 1938	—	Trop. Africa
<i>dilloniana</i> & 7 spp.	16	Atchison 1950	—	"
<i>fulva</i>	16	Eichhorn 1937a	Ma	Trop. Asia
<i>juncea</i> Sunn Hemp & 2 spp.	16	Ramanujam <i>et al.</i> '33	FoMaT	Trop. Asia, Austr.
<i>laburnifolia</i> Rattlebox	16	" "	Ma	India, Phil.
<i>lanceolata</i>	16	Raghavan & V. '43	Ma	Trop. E. Africa
<i>medicaginea</i> & 3 spp.	16	Rao 1950a	Ma	Tropics
<i>mucronata</i> (<i>striata</i>)	16	Senn '38, Rao '50a	Ma	W. Indies
<i>obovata</i>	16	Hagerup 1932	—	Trop. Africa
<i>quinquefolia</i> & 9 spp.	16	Rao 1943	Ma	Trop. Asia
<i>spinosa</i>	16	Eichhorn 1937a	—	Abyssinia
<i>usaramoensis</i>	16	Kawakami 1930	Ma	E. Trop. Africa
<i>valetonii</i>	16	" "	Ma	E. Indies
<i>pilosa</i>	32	Atchison 1950	—	C. & S. Am., W. I.
<i>pumila</i>	32	" "	—	S: U.S.A., W.I.

HEYLANDIA $x=8$

<i>latebrosa</i>	16	Rao 1950a	—	S. India, Ceylon
------------------	----	-----------	---	------------------

ULEX $x=(8) 16$

<i>micranthus</i>	32	de Castro 1945a	—	Spain
<i>minor</i> (<i>nanus</i>) Dwarf Gorse	{ 32	" 1941	—	W. Europe
	{ 64	Tschechow 1931	—	W. Medit.
<i>parviflorus</i> (<i>calycotomoides</i>)	32, 64, 96	de Castro 1943	—	Europe
<i>densus</i>	64	" 1941	—	"
<i>erinaceus</i>	64	" "	—	S.W. Spain
<i>ianthocladus</i>	64	" 1943	—	"
<i>europaeus</i> Gorse, Furze	{ 64	" 1941	FoH	W. Europe
	{ 96	Tschechow 1931	H	"
<i>gallii</i> Dwarf Furze	80	de Castro 1943	—	Portugal
<i>argenteus</i>	96	" "	—	"

STAURACANTHUS (ULEX) $x=8$

<i>aphyllus</i>	48	de Castro 1943	—	Portugal, S.W. Sp.
<i>spectabilis</i>	48	" "	—	" Morocco
<i>vicentinus</i>	48	" 1945a	—	"

NEPA (ULEX) $x=(8)$

<i>boivini</i>	c. 128	de Castro 1943	—	W. Medit.
----------------	--------	----------------	---	-----------

ARGYROLOBIUM $x=(8)$

<i>linnaeanum</i>	48	Lorenzo-Andreu 1951	—	Medit.
-------------------	----	---------------------	---	--------

LUPINUS $x=12$

<i>hirsutus</i> European Blue L.	24	de Zeeuw 1936	FoGH	Medit.
<i>v. micranthus</i>	50?	Tuschnjakowa 1935	—	Sahara
<i>tassilicus</i>	36	Eichhorn 1949	—	Egypt
<i>consentini</i>	32	Malheiros 1942	—	"
<i>subcarnosus</i> Texas Lupin	{ 36	Tuschnjakowa 1935	FoH	Calif., Texas
	{ 48	Savchenko 1935	—	"

LUPINUS (cont.)

<i>albus</i>	Wolf Bean, White L.	30	Olszewska 1954	FoV	S. Eur., W. Asia
		40	Savchenko 1935		
		50	Malheiros 1942		
as <i>varius</i>		48	Savchenko 1935		
<i>angustifolius</i>	Blue L.	40	Malheiros 1942	Fo	Medit.
		48	Kawakami 1930		
<i>arboreus</i>	Tree L.	40	Savchenko 1935	FoH	California
<i>pilosus</i>		40	" "	FoH	Levant
		42	Tuschnjakowa 1935		
		46	de Zeeuw 1936		
<i>luteus</i>	Eur. Yellow L.	48	Kawakami 1930	GFoV	Medit.
		52	Malheiros 1942		
		52	Olszewska 1954		
<i>densiflorus</i>	Gully L.	48	Tuschnjakowa 1935	—	California
<i>douglasii</i>		48	" "	—	"
<i>elegans</i>		48	Savchenko 1935	—	Mexico
<i>micranthus</i>	Field L.	48	Tuschnjakowa 1935	—	W: N. Amer.
<i>mutabilis</i>	S. Amer. L.	48	Malheiros 1942	FoH	S. America
<i>nanus</i>	Sky Lupin	48	Tuschnjakowa 1935	H	California
<i>nootkatensis</i>		48	Maude 1940	—	N.W: N. Amer., N.E. Asia
<i>ornatus</i>		48	Tuschnjakowa 1935	Fo	N.W: N. Amer.
<i>polyphyllus</i>	Washington L.	48	Cooper 1936	H	W: U.S.A.
<i>pubescens</i>	Rusty L.	48	Savchenko 1935	H	Mexico, Guat.
<i>hartwegii</i>		48-50	Tuschnjakowa 1935	H	Mexico
<i>barkeri</i>		50	" "	—	"
<i>rothmaleri</i>		52	Malheiros 1942	—	Medit.
CYTISUS $x = 11, 12$ (13) $x_2 = 23, 25$					
<i>procumbens</i>		22	de Castro 1949	H	S.E. Europe
<i>fontanesii</i>		24	" "	—	W. Medit.
<i>albus</i>		24	Santos 1945	H	S.W. Europe
as <i>lusitanicus</i>		48	de Castro 1949		
as <i>multiflorus</i>	c. 48, c. 96	" "	" "		
<i>grandiflorus</i>		48	" "	H	Iber. Penin.
<i>leiocarpus</i>		48	" "	—	Hungary
<i>maderensis</i>		48	Santos 1945	H	Madeira
<i>proliferus</i>	Escabon	48	de Castro 1949	H	Canary Is.
<i>purgans</i>		c. 48	" "	H	W. Medit.
<i>purpureus</i>		48	Senn 1938	H	S. Austria
<i>austriacus</i>		48, 96	de Castro 1949	H	Eur., Cauc.
<i>nigricans</i>		48, 96	" "	H	S. Europe
<i>supinus</i> (<i>capitatus</i>)	c. 48, 96	" "	" "	H	C. & S. Europe
<i>rochellii</i>		96	" "	H	C. Europe
<i>patens</i>		c. 46	" "	—	Portugal
<i>praecox</i>		46	" "	H	cult
<i>reverchonii</i>		c. 46	" "	—	Medit.
<i>canariensis</i>	Genista	46	" "	H	Canary Is.
		48	Santos 1945		
<i>monspessulanus</i>	Montpelier B.	c. 46	de Castro 1949	H	S. Eur., Medit.
as <i>candicans</i>		48	" "		
<i>hirsutus</i>	c. 46, c. 48, 96	" "	" "	H	S. Eur., Asia M.

CYTISUS (cont.)

<i>battandieri</i>	50	de Castro 1949	H	N.W. Africa
<i>ruthenicus</i>	50	" "	—	S.E. Europe
<i>sessilifolius</i>	52	Tschechow 1931	H	S. Europe, N. Afr.

GENISTA $x = 12$

<i>pilosa</i>	Hairy Greenweed	24	Tschechow 1931	—	W. & S. Europe
<i>falcata</i>		36	Santos 1945	H	Spain, Port.
<i>scorpius</i>		40	Lorenzo-Andreu & G. 1950	H	" "
<i>umbellata</i>		42	Santos 1945	—	N. Africa, Corsica
<i>germanica</i>		46-48	Reese 1952a	H	C. & W. Europe
<i>sagittalis</i>		c. 44	Tschechow 1931		
		c. 46, 48	Santos 1945	H	Eur., W. Asia
<i>anglica</i>	Petty Whin	42	Maude 1939		
		48	Santos 1945	H	W. Europe
<i>dorycnifolia</i>		48	" "	—	Balearics
<i>ferox</i>		48	Tschechow 1931	—	N. Africa
<i>florida</i>		48	Santos 1945	H	Spain
<i>monosperma</i>		48	" "	H	" N. Africa
<i>radiata</i>		48	" "	H	S. Europe
<i>tinctoria</i>	Dyer's Greenweed	48	Tschechow 1931	DHV	Eur., Cauc.
<i>triangularis</i>		48-50	" "	—	S.E. Europe

ECHINOSPARTON $x = 11, 13$

<i>boissieri</i>		44	de Castro 1945	—	S.E. Spain
<i>horridum</i>		44	" "	—	Pyren., S. France
<i>barnadesii</i>		c. 52	" "	—	Spain
<i>lusitanicum</i>		c. 52	" "	—	C. Port. & Spain

SAROTHAMNUS (CYTISUS) $x = 12$

<i>scoparius</i>	Scotch Broom	24, 48	Morton 1955		
		46	Maude 1940		
		48	de Castro 1949	BHMSp	C. Europe

LABURNUM $x = 12$

<i>alpinum</i>	Scotch L.	48	Tschechow 1931	H	S. Europe
<i>anagyroides</i>	Common L.	48	Ishikawa 1916	H	"

SPARTIUM $x = 12?$

<i>junceum</i>	Spanish Broom	48-52	Tschechow 1931	HMT	Medit., Can. Is.
----------------	---------------	-------	----------------	-----	------------------

TRIBE VIII: SOPHOREAE
ORMOSIA $x = 8$

<i>krugii</i>		16	Atchison 1949a	—	W. Indies
<i>panamensis</i>		16	" "	—	C. America
<i>dasycarpa</i>	Necklace T.	16	" 1951	H	W. Indies

BELAIRIA $x = 9$

<i>ternata</i>		18	Atchison 1951	—	Cuba
----------------	--	----	---------------	---	------

CAMOENSIA $x = 9$

<i>maxima</i>		18	Atchison 1951	H	W. Trop. Africa
---------------	--	----	---------------	---	-----------------

SWEETIA $x = 9$

<i>dasycarpa</i>		18	Covas 1949b	—	Brazil
------------------	--	----	-------------	---	--------

SOPHORA $x = 9, 14$					
<i>dauidii</i>		18	Tschechow 1931	W	China
<i>flavescens (angustifolia)</i>		18	" "	D	Siberia
<i>microphylla</i>		18	Atchison 1949a	H	Chile, Peru
<i>moorcroftiana</i>		c. 16	Lechtova-Trnka 1931	W	Himal., China
<i>secundiflora</i>		18	Atchison 1949a	H	C. & S. America
<i>tetraptera</i>	Kowhai	18	" "	H	New Zealand
<i>tomentosa</i>		18	" 1951	—	Tropics
<i>chinensis</i>	Ch. Pagoda T.	28	Kawakami 1930	M	China
<i>japonica</i>	Japanese P. T.	28	Tschechow 1931	DHM	China, Japan
ATELEIA $x = 10$					
<i>gummifera</i>		40	Atchison 1951	—	W. Indies
GOURLIEA $x = 10$					
<i>spinosa</i>		20	Covas & S. 1947	V	Chile
CASTANOSPERMUM $x = 13$					
<i>australe</i>	Austr. Chestnut	26	Sampath & R. 1949	N	N. Australia
CLADRASTIS $x = 14$					
<i>lutea</i>	Yellow Wood	28	Atchison 1949a	H	U.S.A.
MYROXYLON $x = 14$					
<i>pereirae</i>	Balsam of Peru	28	Atchison 1951	MRe	C. America

TRIBE IX: PHASEOLEAE

CLITORIA $x = 8$					
<i>ternata</i>	Butterfly Pea	16	Frahm-Leliveld 1953	DHM(V)	Tropics
<i>cordobensis</i>		24	Krapovickas & K. '51	—	Argentina
AMPHICARPA $x = 10$					
<i>monoica</i>	Hog Peanut	20	Cooper 1936	V	E: N. America
CENTROSEMA $x = 10$					
<i>pubescens</i>		20	Frahm-Leliveld 1953	—	Brazil
GALACTIA $x = 10$					
<i>volubilis</i>		20	Atchison 1949a	—	E: N. America
GLYCINE $x = 10$					
<i>javanica</i>	Rhod. Kudzu Vine	20	Ramanathan 1950	Fo	O.W. Tropics
<i>gracilis</i>	Manch. Soya	40	Fukuda 1933	FoG	Manchuria
<i>max</i>	Soya Bean	{ (80)	40 Sakai 1951	FoG	China, <i>cult</i>
<i>ussuriensis</i>	Wild Soya		40 Tschechow & K. '32a	FoG	N.E. Asia
APIOS $x = 10$					
<i>tuberosa</i>	Wild Bean	c. 40	Atchison 1949a	R	E: N. America
VIGNA $x = 10, 11, 12$					
<i>ambacensis</i>		20	Dusseau & M. '41b	—	Trop. Africa
<i>capensis</i>	Cow Pea	22	Tschechow <i>et al.</i> '32a	V	" <i>cult</i>
<i>glabra</i>	Clay Pea	22	" "	V	"
<i>lanceolata</i>		22	Karpechenko 1925	—	Australia

VIGNA (cont.)						
<i>luteola</i>		22	Schnack & C. 1947	—		Tropics
<i>owahuensis</i>		22	Tschechow & K. '32a	V		Hawaii
<i>unguiculata</i>	Cow Pea	{ 22	Karpechenko 1925	FoMV		Trop. Afr., <i>cult</i>
<i>as sinensis</i>		{ 24	" "			
<i>sesquipedalis</i>	Asparagus B.	24	Kawakami 1930	FoV		Trop. & Sub-trop Asia
ABRUS $x=11$						
<i>precatorius</i>	Ind. Liquorice,	{ 22	Senn 1938,			
	Rosary Pea	{ 22	Poucques 1945	MTo		Trop. Asia
ATYLOSIA (DOLICHOS) $x=11$						
<i> barbata (ornatus)</i>		22	Tschechow & K. '32a	Ma		India, Malaya
ERIOSEMA $x=11$						
<i>psoraloides (cajanoides)</i>		22	Frahm-Leliveld '53	—		Trop. Africa
HARDENBERGIA $x=11$						
<i>monophylla</i>		22	Smith-White unp.	H		Australia
KENNEDYA $x=11$						
<i>rubicunda</i>		22	Smith-White unp.	H		Australia
MUCUNA $x=11$						
<i>pruriens</i>	Cowage	22	Frahm-Leliveld '53	FoMa		Tropics
STIZOLOBIUM (MUCUNA) $x=11$						
<i>deeringianum</i>	Florida Velvet B.	22	Schnack & F. 1946	V		S. Asia
PACHYRRHIZUS $x=11$						
<i>erosus</i>	Yam Bean	22	Roy 1933	IRV		Tropics
<i>tuberosus</i>	Potato B., Jicama	22	Senn 1938	RV		W. Indies
RHYNCHOSIA $x=11$						
<i>erecta</i>		22	Atchison 1949a	—		E: N. America
<i>minima</i>		22	Senn 1938	—		Tropics
<i>phaseoloides</i>		22	Tschechow & K. '32a	H		"
<i>senna</i>		22	Schnack & C. 1947	—		Argentina
<i>volubilis</i>		22	Sakai 1951	—		China, Japan
VOANDZEIA $x=11$						
<i>subterranea</i>	Bambarra, Gnd. N.	22	Frahm-Leliveld '53	NV		Madagascar
CANAVALIA $x=11$						
<i>ensiformis</i>	Jack Bean	22	Kawakami 1930	MaV		W. Indies
<i>plagiosperma</i>		22	Simmonds 1954	V		Cuba
<i>gladiata</i>	Sword Bean	22, 44	Covas 1949b	V		O.W. Tropics
CAJANUS $x=11$						
<i>cajan (indicus)</i>	Pigeon Pea	22, 44, 66	Pathak & Y. '51	Fo ₁ GV		India, <i>cult</i>
DOLICHOS $x=11, 12$						
<i>lablab</i>	Lablab, Bonavist	{ 22	Frahm-Leliveld '53	FoG		Abyss., <i>cult</i>
		{ 24	Ayyangar & K. 1935			
<i>lubia</i>		22	Tschechow & K. '32a	V		Egypt
<i>biflorus</i>	Horse Gram	24	Rau 1929b	FoG		India, Burma

PHASEOLUS $x = 11, 12$					
<i>aborigineus</i>		22	Burkart & B. 1953	G	C. Amer.—Argen.
<i>aconitifolius</i>	Math or "Moth" B.	22	Tschechow & K. '32	FoGMaV	India, <i>cult</i>
<i>acutifolius</i>	Tepary Bean	22	Karpechenko 1925	V	Ariz., Mex.
<i>angularis</i>	Azuki B.	22	" "	GV	China, <i>cult</i>
<i>aureus</i>	Mung or Green Gram	22	" "	FoGV	India, China, <i>cult</i>
		(44)	Kumar & A. 1942b		
<i>as radiatus</i>		22	Frahm-Leliveld 1953		
		24	Karpechenko 1925		
<i>calcaratus</i>	Rice Bean	22	Frahm-Leliveld 1953	GMaV	India, Malaya
<i>chrysanthos</i>		22	Muto 1929	V	China, Japan
<i>coccineus</i>	Scarlet Runner	22	Karpechenko 1925	V	Peru, <i>cult</i>
<i>(multiflorus)</i>					
<i>helvolus</i>	Amberique B.	22	Senn 1938	FoGMa	N. America
<i>lunatus</i>	Lima Bean	22	Karpechenko 1925	V	Peru, <i>cult</i>
		22	" "		
<i>mungo</i>	Urd or Black G.	24	Rau 1929b	GMa	Trop. Asia, <i>cult</i>
<i>polystachys</i>	Thicket B.	22	Allard & A. 1940	Ma	E: U.S.A.
<i>ricciardianus</i>	Assam B.	22	EKJ*	GV	Assam
<i>semierectus</i>		22	Senn 1938	FoMa	Trop. Amer.
<i>trilobus</i>	Jungli Math B.	22	Karpechenko 1925	Fo(G)Ma	O.W. Tropics
<i>vulgaris</i>	French, Kidney or Dwarf B.	22	Thomas 1945*	GV	Peru, <i>cult</i>

PUERARIA $x = 11, 12$					
<i>thunbergiana</i>	Kudzu Vine	22	Simmonds 1954		
<i>(hirsuta)</i>		24	Suzuka 1950,	FoRT	China, Japan
		24	Sakai 1951		
<i>javanica (phaseoloides)</i>		22	Hárdas & J. 1954		
		24	Frahm-Leliveld 1953	MaT	Malaya

DIOCLEA $x = 12$					
<i>boykinii</i>		24	Nemec 1910	—	N. America

CALOPOGONIUM $x = 18$					
<i>mucunoides</i>		36	Frahm-Leliveld 1953	—	Guiana

ERYTHRINA * $x = 21$					
<i>caffra</i>		42	Atchison 1947c	H	S. Africa
<i>corallodendron</i>	Coral T.	42	" "	H	Trop. America
<i>crista-galli</i>	Ceibo	42	" "	FoHMaSh	S. America
<i>herbacea</i>		42	" "	FoH	S.E: U.S.A.
<i>indica</i>	Indian C. T.	42	Rao 1945	DFoMShW	Trop. Asia, Austr.
		44	Poucques 1945		
<i>poeppegiana</i>	Anauca Imortelle	42	Simmonds 1954	—	Peru
<i>velutina</i>		42	" "	—	Trop. America
<i>vespertilia</i> & 27 spp.		42	Atchison 1947c, 1951	H	Australia
<i>acanthocarpa</i>		84	" 1947c	—	S. Africa
<i>amazonica</i>		84	" "	—	Peru, Brazil
<i>burtii</i>		c. 126	" 1951	—	Tanganyika

TRIBE X: DALBERGEAE

ANDIRA $x = 10$					
<i>inermis</i>	Cabbage Bark T.	20	Atchison 1951	MW	Trop. Amer., W. I.

DALBERGIA $x = 10$					
<i>cochinchinensis</i>		20	Atchison 1951	—	Cochin China
<i>lanceolaria</i>		20	" "	—	India
<i>latifolia</i>	Rosewood T.	20	" "	W	"
<i>melanoxylon</i>	Blackwood T.	20	" "	W	Trop. Africa
<i>paniculata</i>		20	" "	—	India
INOCARPUS $x = 10$					
<i>edulis</i>	Tahiti Chestnut	20	Atchison 1951	N	Pacific Is.
TIPUANA $x = 10$					
<i>tipu</i>		20	Atchison 1951	—	Argentina
GEOFFRAEA $x = 10$					
<i>decorticans</i>	Channar	20	Covas & S. 1947	FoMW	S. America
<i>striata</i>	Mandubira	60	Burkart 1949a	—	"
PONGAMIA (GALEDUPA) $x = 10, 11$					
<i>pinnata (glabra)</i>	Pongam,	{	20 Atchison 1951	FoHO ShW	India, Malaya, Austr., Poly.
	Indian Beech		22 Patel & N. 1937		
PISCIDIA $x = 11$					
<i>piscipula</i>		22	Atchison 1951	M	Fla., Mex., W. I.
LONCHOCARPUS $x = 11$					
<i>cyanescens</i>	Yoruba Indigo	22	Atchison 1949b	D	W. Trop. Africa
<i>formosianus</i>		22	" "	—	E. Asia
<i>hintonii</i>		22	" "	—	C. America
<i>latifolius</i>		22	" "	—	Trop. America
<i>leucanthus</i>		22	Covas & S. 1947	—	Uruguay
<i>longistylis</i>		22	Atchison 1949b	—	Mexico
<i>neuroscapha</i>		22	" "	—	Brazil
<i>punctatus</i>		22	" "	—	S. America
<i>violaceus</i>		22	" "	—	W. Indies
<i>utilis</i>	Timbo-blanco	44	" "	I	Amazon
PTEROCARPUS $x = 11$					
<i>macrocarpus</i>		22	Atchison 1951	—	Burma
<i>marsupium</i>	Indian Kino	44	" "	MW	India, Ceylon
<i>vidalianus</i>		44	" "	—	Philippines
DERRIS $x = 11, 12, 13$					
<i>elegans</i>		22	Toxopeus 1952	—	Burma
<i>pubipetale</i>		22	Tjio 1948	—	Java
<i>pteroecarpus</i>		22	Atchison 1949b	—	S. America
<i>sinuata</i>		22	" "	—	Burma, Malaya
<i>malaccensis</i>	M. Derris	22, 24	Toxopeus 1952	I	Malaya
<i>uliginosa</i>		{	22 Tjio 1948	—	O.W. Tropics
			24 Toxopeus 1952		
<i>elliptica</i>	Tuba Root	{	22 Atchison 1949b	I	Malaya
			22, 24, 36 (3x) Toxopeus 1952		
<i>heterophylla</i>		24	" "	—	" <i>cult</i>
<i>timorensis</i>		26	" "	—	E. Indies
					Timor, Java, N. Guinea
PLATIMISCIUM $x = 16$					
<i>pinnatum</i>		32	Atchison 1951	W	Nicaragua

Group X

HAMAMELIDALES

149–155

ST

GARRYALES

157

ST

MYRICALES

159

ST

FAGALES

161–163

ST

SALICALES

156

ST

LEITNERIALES

158

S

(BALANOPSIDALES)

160

ST

CASUARINALES

164

ST

URTICALES

165–170

HST



Betula verrucosa

151 HAMAMELIDACEAE

DISTYLIUM $x = 12$					
<i>racemosum</i>		24	Sugiura 1936a	H	Japan
HAMAMELIS $x = 12$					
<i>vernalis</i>	Witch Hazel	24	Anderson & S. 1935	HM	E: N. America
<i>virginiana</i>	N. Amer. W. H.	24	Whitaker 1933a	HM	" "
PARROTIOPSIS $x = 12$					
<i>jacquemontiana</i>		24	Anderson & S. 1935	H	Himalayas
SINOWILSONIA $x = 12$					
<i>henryi</i>		24	Anderson & S. 1935	H	C. China
CORYLOPSIS $x = 12$					
<i>pauciflora</i>	Winter Hazel	24	Anderson & S. 1935	H	Japan
<i>spicata</i>		72	" "	H	"
<i>veitchiana</i>		72	" "	H	China
FOTHERGILLA $x = 12$					
<i>monticola</i>		48	Anderson & S. 1935	H	S.E: U.S.A.
<i>major</i>		72	" "	H	"
LIQUIDAMBAR $x = 15?$					
<i>styraciflua</i>	Sweet Gum	30	Anderson & S. 1935	HM	E: U.S.A.

152 EUCOMMACEAE

EUCOMMIA $x = 17$					
<i>ulmoides</i> ♂	Ch. Gutta Percha	34	EKJ*	M	China

154 BUXACEAE

BUXUS $x = (7) 14$					
<i>balearica</i>	Spanish Box	28	Simonet & M. 1932	HW	W. Medit.
<i>sempervirens</i>	Common Box	28	" "	HW	Eur., S.W. & C. A.
SARCOCOCCA $x = (7) 14$	(Apomixis)				
<i>saligna (pruniformis)</i>		28	Simonet & M. 1932	H	Himalayas
<i>humilis</i>		56	" "	H	China
<i>ruscifolia</i>		56	" "	H	"

155 PLATANACEAE

PLATANUS $x = (7) 21$					
<i>acerifolia</i>	London Plane	42	Sax 1933b	Sh	<i>cult</i>
<i>occidentalis</i>	Buttonwood	42	" "	ShW	E: U.S.A.

156 SALICACEAE

POPULUS* $x = 19$					
<i>acuminata</i>		38	E. C. Smith 1943	—	C: U.S.A.
<i>angustifolia</i>		38	" "	H	S: U.S.A.

POPULUS (cont.)

<i>cathayana</i>		38	E. C. Smith 1943		N.W. Ch.—Korea
<i>deltoides</i>	Cottonwood	38	Dillewijn 1942	H	E: N. America
<i>grandidentata</i>		38	Smith 1943	HW	" "
<i>koreana</i>		38	" "	H	Korea
<i>lasiocarpa</i>	Chinese P.	38	Wettstein, T. 1937	HW	C. & W. China
<i>laurifolia</i>		38	Smith 1943	H	Siberia
<i>maximowiczii</i>		38	" "	H	N.E. Asia, Japan
<i>sieboldii</i>	Japan. Aspen	38	Nakajima 1937	HW	Japan
<i>simonii</i>		38	Smith 1943	HW	N. China
<i>tomentosa</i>	Ch. White P.	38	" "	H	"
<i>tremuloides</i>	Amer. Aspen	38	" "	DW	N. America
<i>trichocarpa</i>	Calif. P.	38	" "	HW	W: N. America
<i>alba</i>	White Poplar	38, 57	Dillewijn 1939	DHW	Eur., N. Asia
<i>nigra</i>	Black P.	38, 57	Suto 1944	HW	Eur., W. Asia
<i>tremula</i>	Eur. Aspen	37, 57	Johnsson 1940a	W	Eurasia, N. Africa
		(57-76)	" 1942b		
<i>tacamahaca</i>	Balsam P.	{ 38	Smith 1943	HMW	N. America
<i>(balsamifera)</i>		{ 76	Blackburn & H. 1924		
<i>candicans</i>	Balm of Gilead & 10 spp.	38	Smith 1943	HM	<i>cult</i>
<i>canescens</i>	Grey P.	38, 57	Peto 1938	HW	"

SALIX* x=19, 22

		x=19			
<i>bockii</i>	& 2 spp.	38	Wilkinson 1944	—	W. China
<i>gracilistyla</i>		38	Håkansson 1929a	H	Japan, Korea
<i>humboldtiana</i>		38	Bowden 1940a	—	S. America
<i>japonica</i>	& 2 spp	38	Sinoto 1929	H	Japan
<i>myrtilloides</i>	& 4 spp.	38	Holmberg 1931	H	Eurasia
<i>purpurea</i>	Purple Osier	38	Blackburn & H. 1924	HT	Temp. O.W.
<i>pyrolaeifolia</i>	Balsam Willow	38	L. & L. 1942	H	N.E. Asia
<i>repens</i>	& 2 spp.	38	Nakajima 1937	H	Eur., N. Asia
<i>reticulata</i>		38	S. & S. 1941	H	N. & Arctic
<i>seringeana (salvaefolia)</i>		38+0-4B	Almeida 1946	H	Europe, <i>cult</i>
<i>viminialis</i>	Osier, Basket W.	38	Sinoto 1929	TW	Eurasia
<i>sachalinensis</i>		38, c. 48	" "	—	Sachalin
<i>daphnoides</i>		{ 38	Blackburn & H. 1924	—	Eur., N. Asia
		{ 57	Wilkinson 1944		
<i>capraea</i>	Goat W.	{ 38, 76	" "	HP	" "
		{ 57	L. & L. 1942		
<i>aurita</i>		38, 76	Wilkinson 1944	—	" "
<i>lapponum</i>		38, 76	" "	—	" "
<i>myrsinites</i>		{ 38, 190	" "	H	" "
		{ 152	Holmberg 1931		
<i>bonplandiana</i>		42!	Bowden 1945b	—	Mexico
<i>alba</i>	White W.	76	Blackburn & H. 1924	W	Eur., W. Asia, N. Africa
<i>v. coerulea</i>	Cricket-bat W.	76	Wilkinson 1941		
<i>atrocinerea</i>		76	" "	—	Eur., S.W. & N. Asia
<i>babylonica</i>	Weeping W.	76	Almeida 1946	H	China
<i>cinerea</i>	Grey W.	76	Harrison 1926	H	Eur., S.W. & N. Asia

SALIX (cont.)

<i>erlocarpa</i>		76	Nakajima 1942	—	Japan
<i>lasianandra</i>		76	Wilkinson 1944	—	W: N. America
<i>laurina</i>	Goat Tea W.	76	Heribert-Nilsson '28	—	Europe
<i>lucida</i>		76	Harrison 1926	—	N. America
<i>medemii</i>		76	Wilkinson 1944	—	Persia, Armenia
<i>pentandra</i>	Bay W.	76	Blackburn & H. 1924	H	Eur., N. Asia
<i>polaris</i>		76	Holmberg 1931	—	Arctic
<i>sieboldiana</i>		76	Wilkinson 1944	—	Japan
<i>dasyclados</i>		76, 114	L. & L. 1942	—	Europe
<i>fragilis</i>	Crack W.	{ 76	Blackburn & H. 1924	W	Eur., W. Asia
		{ 114	L. & L. 1942		
<i>nigricans</i>		114	Harrison 1926	H	Eur., W. & N. As.
<i>borealis</i>		152	L. & L. 1942	H	" "
<i>superlaurina</i>		152	Heribert-Nilsson '35	H	<i>cult</i>
<i>dasycladoides</i>		152	" " "	H	Europe
<i>x</i> = 19 or 22?					
<i>livida</i>		{ 44	Wilkinson 1944	—	Eur., N. Asia
<i>as depressa</i>		{ 38	L. & L. 1948	—	
<i>amygdalina (triandra)</i>	38, 44, 88	88	Wilkinson 1944	—	Eur., Temp. Asia
<i>cordata</i>		44	" "	—	N. America
		88	" "		
<i>phyllicifolia</i>	Tea-leaf W.	{ 144	Håkansson 1333	H	Eur., N. Asia
		{ (38)	L. & L. 1942		
<i>glauca</i>	Grey-leaf W.	{ 152	Holmberg 1931	H	Eur. Alps, Asia,
		{ 176	Wilkinson 1944		N. America
TOISUSU (SALIX) <i>x</i> = 19					
<i>cardiophylla</i>		38	Suto 1938	—	N.E. Asia

157 GARRYACEAE (CORNACEAE)

GARRYA <i>x</i> = 11					
<i>elliptica</i>	Silk-Tassel Bush	22	Meurman 1930	H	W: N. America

159 MYRICACEAE

MYRICA <i>x</i> = 8					
<i>carolinensis</i>	North. Bayberry	16	Stokes 1937	HM	E: N. America
<i>cerifera</i>	S. Wax Myrtle	16	" "	HM	"
<i>pumila</i>		16	" "	—	"
<i>rubra</i>		16	Sugiura 1927	HSp	Tr. & Sub-tr. As.
<i>gale</i>	Sweet Gale	48	Hagerup 1941b	HSp	N. Temp.
COMPTONIA <i>x</i> = 8					
<i>peregrina</i>	Sweet Fern	32	Stokes 1937	HM	E: N. America

161 BETULACEAE

ALNUS <i>x</i> = 14 (Apomixis)					
<i>crispa</i>	Amer. Green A.	28	Woodworth 1931	W	N. America
<i>incana</i>	Speckled A.	28	" "	W	N. Temp.

ALNUS (cont.)

<i>maritima</i>		28	Woodworth 1931	W	N. America
<i>rubra</i>	Red Alder	28	Wetzel 1929	W	W: N. America
<i>rugosa</i>	Hazel A.	28	Woodworth 1931	W	E: N. America
<i>tenuifolia</i>	Mountain A.	28	Gram <i>et al.</i> 1941		W: N. America
<i>viridis</i>	Eur. Green A.	28	Wetzel 1929	W	N. Temp.
<i>cordata</i>	Italian A.	{ 28 42	Gram <i>et al.</i> 1941 Poucques 1949b	W	Eur., S.W. Asia
<i>hirsuta</i>	Manchurian A.	28	Gram <i>et al.</i> 1941	—	N.E. Asia
<i>v. sibirica</i>		28	Poucques 1949b		
<i>as tinctoria</i>		42	" "		
<i>orientalis</i>		{ 28 42	Poucques 1949b Gram <i>et al.</i> 1941	—	E. Eur., S.W. Asia
<i>japonica</i>	Jap. Alder	{ 28 42 56	Wetzel 1929 Gram <i>et al.</i> 1941 Woodworth 1931	W	Japan, N.E. Asia
<i>subcordata</i>	Caucasian A.	{ 28 42, 56	Wetzel 1929 Gram <i>et al.</i> 1941	W	Cauc., Persia
<i>glutinosa</i>	Eur. Black A.	{ 28 56	Wetzel 1929 Woodworth 1931	MW	Eur., N. Asia
<i>borealis</i>		56	Poucques 1949b	—	Japan
<i>spaethii</i>		56	Woodworth 1931	W	<i>cult</i>

BETULA x = 14

<i>coerulea</i>		28	Woodworth 1931	—	E: N. America
<i>fontinalis</i>	Water Birch	28	" "	W	W: N. America
<i>glandulosa</i>		28	Poucques 1949c	—	N. America
<i>humilis</i>		28	Jaretsky 1930	—	Eur., N. Asia
<i>lenta</i>	Sweet B.	28	Woodworth 1931	MW	N. America
<i>luminifera</i>		28	Poucques 1949c	—	China
<i>maximowicziana</i>	Monarch B.	28	Woodworth 1931	W	Japan
<i>nana</i>	Dwarf Arctic B.	28	Flovik 1940	W	N. Region
<i>nigra</i>	River B.	28	" "	W	N. America
<i>populifolia</i>	Grey B.	28	" "	—	E: N. America
<i>utilis</i>	Himalayan B.	28	" "	TW	Japan, Himal.
<i>raddeana</i>		28	Poucques 1949c	—	Caucasus
<i>verrucosa</i>	Silver Birch	{ 28 42	Johnsson 1940b " 1944	HOW	Eur., N. Asia, N. Amer.
<i>(pendula, alba)</i>					
<i>mandschurica</i>	Jap. White B.	56	Woodworth 1929a	—	Jap., Manch., Kor.
<i>v. japonica</i>		28!	" "		
<i>papyrifera</i>	Paper B., Canoe B.			TW	N. America
<i>v. occidentalis</i>		84	Woodworth 1931		
<i>as lyalliana</i>		28	Poucques 1949b		
<i>v. cordifolia</i>	Mtn. P. B.	56	Woodworth 1929a		
<i>v. subcordata</i>		56	" 1931		
<i>v. kenaica</i>		70	" "		
<i>callosa</i>		56	L. & L. 1948	—	Europe
<i>celtibetica</i>		56	de Castro 1944	—	Iber. Penin.
<i>fruticosa</i>		56	Poucques 1949c	—	N.E. Asia, China
<i>pubescens (odorata)</i>		56	Johnsson 1940a	H	Eur., N. Amer., N. Asia
<i>v. urticifolia</i>		56	Jaretsky 1930	—	<i>cult</i>
<i>pumila</i>	Low B.	56	Woodworth 1931	HW	N. America
<i>tortuosa</i>		56	L. & L. 1944b	—	Europe

BETULA (cont.)

<i>davurica</i>		{ 56	Poucques 1949c	W	N.E. Asia
		{ 90	Woodworth 1929a		
<i>grossa</i>	Jap. Cherry B.	84	" 1931	W	Japan
<i>lutea</i>	Yellow B.	84	" "	W	N. America

162 CORYLACEAE

CARPINUS $x=8$

<i>caroliniana</i>	Bluebeech	16	Woodworth 1931	W	N. America
<i>cordata</i>		16	" "	W	Japan
<i>japonica</i>	Jap. Hornbeam	16	" "	W	"
<i>laxiflora</i>	Loose flower H.	16	" "	W	"
<i>orientalis</i>	Oriental H.	16	" "	W	S. Europe
<i>tschonoskii</i>	Yeddo H.	16	Johnsson 1942a	W	Japan
<i>turczaninowii</i>		16	Woodworth 1931	W	China
<i>betulus</i>	Eur. H.	16, 64	Johnsson 1942a	W	Europe, Persia

OSTRYA $x=8$

<i>carpinifolia</i>	Eur. Hop. H.	16	Woodworth 1931	—	S. Eur., A. Minor
<i>japonica</i>	Jap. Hop H.	16	" "	—	E. Asia
<i>virginiana</i>	Amer. Hop. H.	16	" "	W	E: U.S.A.
<i>davidiana</i>		16	" "	—	Asia Minor

CORYLUS $x=11, 14$

<i>avellana</i>	Eur. Hazel	{ 22	Danielsson 1946	NW	Europe, W. Asia
	Cobnut	{ 28	Woodworth 1929b		
<i>tibetica</i>		{ 22	Poucques 1950	N	Himalayas
		{ 28	Woodworth 1929b		
<i>americana</i>	Amer. Hazel	28	" "	N	N. America
<i>columna</i>	Turkey Filbert	28	" "	N	E. Eur., A. Minor, Himalayas
<i>heterophylla</i>	Siberian F.	28	" "	N	N.E. Asia
<i>maxima</i>	Giant F.	28	" "	N	Eur., A. Minor
<i>pontica</i>	Caucasian F.	28	" "	N	E. Eur., A. Minor, Himalayas
<i>rostrata</i>	Beaked H.	28	" "	N	E: N. America
<i>sieboldiana</i>	Japanese F.	28	" "	N	Japan

163 FAGACEAE

CASTANEA $x=12$

<i>crenata</i>	Jap. Chestnut	24	Almeida 1947b	NW	Japan
<i>dentata</i>	American Ch.	24	Jaretsky 1930	NW	E: U.S.A.
<i>mollissima</i>		24	Poucques 1950	NW	China
<i>sativa</i>	Sweet or	24	Jaretsky 1930	HNW	S. Eur., W. Asia,
(<i>vesca</i>)	Spanish Ch.				N. Africa

FAGUS $x=12$

<i>sylvatica</i>	Eur. Beech	24	Jaretsky 1930	NOW	Europe
------------------	------------	----	---------------	-----	--------

QUERCUS* $x=12$

<i>acutissima</i>	Sawtooth Oak	24	R. Yamazaki 1936	W	China
<i>alba</i>	White O.	24	Sugiura 1931	W	N. America

QUERCUS (cont.)

<i>chrysolepis</i>	Canyon Live O.	24	Duffield 1940	—	California
<i>coccifera</i>	Kermes Oak	24	Ghimpu 1929b	Fo ₁ W	Medit.
<i>dalechampii (aurea)</i>		24	Jaretsky 1930	—	Eur., W. Asia
<i>fruticosa (humilis)</i>		24	Natividade 1937	NW	Medit.
<i>glandulifera</i>		24	Jaretsky 1930	—	Japan
<i>ilex</i>	Holm Oak	24	Natividade 1937	HW	Medit., S.W. Asia
<i>imbricaria</i>	Shingle O.	24	H. J. Sax 1930	W	N. America
<i>incana</i>		24	Vignoli 1933	W	Himalayas
<i>libani</i>	Lebanon Oak	24	Jaretsky 1930	W	Syria
<i>lusitanica</i>	Portuguese O.	24	Natividade 1937	W	Med., S.W. Asia
<i>macrocarpa</i>	Bur Oak	24	H. J. Sax 1930	W	N. America
<i>marilandica</i>	Blackjack O.	24	Friesner 1930	W	"
<i>mongolica</i>	Mongolian O.	24	H. J. Sax 1930	Fo ₁ W	N.E. Asia
<i>muhlenbergii</i>	Chinkapin O.	24	" "	W	N. America
<i>nigra</i>	Water O.	24	Jaretsky 1930	"	"
<i>palustris</i>	Pin O.	24	Ghimpu 1929b	W	"
<i>polymorpha</i>		24	Vignoli 1933	W	Mexico
<i>pontica</i>		24	Jaretsky 1930	W	Asia Minor
<i>prinoides</i>	Dwarf Chinkapin O.	24	Friesner 1930	W	N. America
<i>prinus</i>	Swamp Ch. O.	24	" "	W	"
<i>pubescens (lanuginosa)</i>		24	Vignoli 1933	W	S.E. Eur., W. Asia
<i>pyrenaica (toza)</i>		24	" "	W	S. Europe
<i>petraea</i>	Durmast O.	24	Natividade 1937	W	Eur., W. Asia
<i>robur & 19 spp.</i>		24	Duffield 1940	DNW	Eur., N. America
<i>tomentosa</i>		24	Vignoli 1933	W	Mexico
<i>dentata</i>	Jap Silk Worm O.	48	H. J. Sax 1930	Fo ₁ W	Jap., Kor., Ch.

164 CASUARINACEAE

CASUARINA x = 11, 12, 13

<i>distyla</i>		22, 44	Purcell 1953	HW	Aust., Tasm.
<i>equisetifolia</i>	Horsetail Tree	24	Wetzel 1929	HShW	N. Austr., cult
<i>montana</i>		24	" "	W	Malaya
<i>nana</i>	Dwarf She-Oak	36	Purcell 1953	H	New South Wales
<i>suberosa</i>	Erect Beefwood	48	" "	HW	Austr., Tasm.
<i>stricta</i>	Coast Cas.	26	" "	HShW	" "
<i>torulosa</i>	She-Oak	26	" "	HW	E. Australia
<i>paludosa</i>		c. 52	" "	—	Austr., Tasm.

165 ULMACEAE

CELTIS x = 10, 11, 14

<i>laevigata</i>		20	Bowden 1945b	H	S.E. U.S.A.
<i>sinensis</i>		20	" "	H	Ch., Kor., Jap.
<i>australis</i>	Hackberry	40	" "	FoH	S. Eur., N. Africa, W. Asia
<i>occidentalis</i>	Sugar-berry	{ 20	" "	FH	E: N. America
		28	Sax 1933a		
<i>spinosa</i>		22	Covas & S. 1947	—	Brazil

HOLOPTELEA (ULMUS) x = 14

<i>integrifolia</i>		28	Capoor 1937	W	India
---------------------	--	----	-------------	---	-------

ZELKOVIA $x = 14$

<i>serrata</i>	Keaki	28	Sax 1933a	W	Japan
----------------	-------	----	-----------	---	-------

ULMUS $x = 14$

<i>carpinifolia</i>	Smooth-leaf Elm	28	Sax 1933a	W	Eur., S.W. Asia
<i>hollandica</i>	Dutch E.	28	" "	—	<i>cult</i>
<i>fulva</i>	Slippery Elm	28	" "	MW	N. America
<i>japonica</i>	Japanese E.	28	" "	W	E. Asia
<i>laciniata</i>	Manchurian E.	28	" "	W	"
<i>laevis</i>	Russian E.	28	" "	W	Eur., Cauc.
<i>procera</i>	English Elm	28	" "	W	Eur., N. Asia
<i>pumila</i>	Siberian E.	28	Leliveld 1933	W	N. Asia
<i>racemosa</i>	Rock Elm	28	Sax 1933a	W	N. America
<i>wilsoniana</i>		28	Krijthe 1939	W	China
<i>americana</i>	White Elm	{ 28	Krause 1930	W	N. America
		56	Sax 1933a		
<i>glabra</i>	Scotch Elm	28, (42, 56)	Ehrenberg 1949	HW	Eur., N. Asia
v. <i>montana</i>		28	Leliveld 1933		
v. <i>scabra</i>		28	Sax 1933a		

167 MORACEAE**DORSTENIA** $x = 12, 13, 14$, etc.

<i>barteri</i>		24	Krause 1930	—	Trop. Africa
<i>convexa</i>		24	" "	—	"
<i>yambuyaensis</i>		24	" "	—	"
<i>plumeriaefolia</i>		26	" "	—	Brazil
<i>erecta</i>		28	" "	HM	"
<i>contrajerva</i>	Contrayerva	30	" "	HM	Trop. America
<i>argentata</i>	Brazilian C.	32	" "	M	Brazil
<i>scabra</i>		40	" "	—	Trop. Africa
<i>mannii</i>		48	" "	—	"

BROSIMUM $x = 13$

<i>alicastrum</i>	Breadnut	26	Krause 1930	(V)W	Trop. America
-------------------	----------	----	-------------	------	---------------

BROUSSONETIA $x = 13$

<i>papyrifera</i>	Paper Mulberry	26	Bowden 1940a	T	China, Japan
<i>kazinoki</i>		26, 39	Seki 1950	T	Japan, Korea

FICUS $x = 13$

<i>altissima</i>		26	Krause 1931	—	Trop. Asia
<i>asperima</i>	Sandpaper F.	26	Condit 1933	ToW	India
<i>benghalensis</i>	Banyan Tree	26	" "	FoShW	India, Trop. Afr.
<i>benjamina</i>		26	" "	FoSh	Trop. Asia
<i>calophylloides</i>		26	" "	—	Philippines
<i>carica</i>	Fig	26	" 1928	FM	Med., <i>cult</i>
<i>cumingii</i>		26	" 1933	—	Philippines
<i>diversifolia</i>	Mistletoe Fig	26	" "	Fo	Malaya
<i>erecta</i>		26	" 1928	H	India, Ch., Jap.
<i>eugenioides</i>	Eugenia F.	26	" 1933	—	Australia
<i>elastica</i>	India-rubber T.	26	Sugiura 1936	HRu	Trop. Asia
<i>glabella</i>	Smooth F.	26	Condit 1933	Ru(V)	Himal., Burma, Malaya
<i>glomerata</i>	Cluster Fig	26	" 1928	F	India, Burma
<i>henneana</i>		26	" 1933	—	Australia
<i>hirsuta (panduraefolia)</i>		26	Krause 1930	—	Brazil

FICUS (cont.)

<i>indica</i>	Indian Fig	26	Condit 1933	Fo ₁ W	Trop. Asia, Mal.
<i>macrophylla</i>	Moreton Bay F.	26	" 1928	—	Australia
<i>mitrophora</i>		26	" "	Sh	W. Indies
<i>mysorensis</i>	Mysore F.	26	" "	Sh	India
<i>palauanensis</i>		26	" "	T	Philippines
<i>palmata</i>		26	" "	—	N.W. Ind., Abyss., Arabia
<i>pandurata</i>	Riddle-leaf F.	26	" "	—	China
<i>papaya</i>		26	" "	—	Malaya
<i>parcelli</i>		26	Krause 1931	—	Pacific Is.
<i>platypoda</i>		26	Condit 1928	—	Australia
<i>populnea (brevifolia)</i>		26	" "	—	S. America
<i>pseudocarica</i>	Abyss. F.	26	" "	—	Abyssinia
<i>pseudopalma</i>		26	" 1933	—	Philippines
<i>pumila</i>	Ok-gue	26	" 1928	FH	China, Japan
<i>quercifolia</i>		26	" 1930	—	Burma, Malaya
<i>religiosa</i>	Peepel Tree	26	" 1933	Fo ₁ H	India
<i>retusa</i>	India Laurel	26	" "	MRu	India, Malaya
<i>rubiginosa</i>		26	" 1928	—	Australia
<i>scabra</i>	Rough Fig	26	" 1933	T	New Hebrides
<i>schlechteri</i>		26	Krause 1930	—	S. Ind., New Cal.
<i>subscabrida</i>		26	Condit 1933	—	W. Indies
<i>ulmifolia</i>	Elm Leaf F.	26	" "	—	Malaya
<i>vogelii</i>	Abba Tree	26	" "	Ru	Trop. Africa
<i>watkinsiana</i>		26	" "	—	Australia

CASTILLOA x = 14

<i>elastica</i>	Panama Rubber	28	EKJ*	Ru	Mex. T. Amer.
-----------------	---------------	----	------	----	---------------

CECROPIA x = 14

<i>palmata</i>	Silverleaf S.	28	Krause 1931	—	Brazil
<i>peltata</i>	Indian S.	28	" "	(V)W	Trop. America
<i>leucocoma</i>		28	Bouharmont 1954	—	S. America

ARTOCARPUS x = 14

<i>cannoni</i>		28	Krause 1931	H	S. Sea Is.
<i>integra</i>	Jack Fruit	56	EKJ*	FFoN ReW	India, Malaya
<i>lakoocha</i>		56	Banerji & H. 1954	—	India, Malaya
<i>communis (incisa)</i>	Bread Fruit	56	EKJ*		
	(seedless)	54	Nishiyama & K. '42	FoMTVW	Malaya, Pacific
		c. 81 (3x)	" "		

MUSANGA x = 14

<i>cecropioides</i>		28	Bouharmont 1954	—	Congo
---------------------	--	----	-----------------	---	-------

MORUS x = 14

<i>acidosa</i>		28	Osawa 1920	F	Jap., Ch., Korea
<i>atropurpurea</i>		28	" "	F	Temp. Asia
<i>bombycis</i>		28	Sinoto 1929	FFo ₁	"
<i>cordatifolia</i>		28	Ishida 1951	—	Japan
<i>indica</i>	Silk Mulberry	28	Tahara 1910	FFo ₁	Trop. Asia
<i>kagayamae</i>		28	Osawa 1920	Fo ₁	Japan
<i>laevigata</i>		28	Janaki Ammal 1948	—	W. Himalayas
<i>microphylla</i>		28	" "	F	Texas, Mexico
<i>multicaulis</i>	Downing M.	28	Osawa 1920	F	N. America

MORUS (cont.)

<i>rubra</i>	Red Mulberry	28	Janaki Ammal 1948	F	E: U.S.A.
<i>serrata</i>		28	" " "	—	W. Himalayas
<i>alba</i>	White M.	28	Osawa 1920	FF ₀₁ TV	Temp. Asia
v. <i>makado</i> (3x)		42	" "		
(<i>atropurpurea</i> × <i>alba</i>)					
<i>cathayana</i>		56, 84, 112	Janaki Ammal 1948	—	Hupeh, Szechuan
<i>nigra</i>	Black M.	308!	P. T. Thomas, D. & L. C. 1942	FF ₀₁ W	Persia, <i>cult</i>

CUDRANIA $x = 14$

<i>tricuspidata</i>	Silkworm T.	56	Sinoto 1929	FF ₀₁ D	Jap., Ch., Korea
(<i>triloba</i>)					

169 URTICACEAE

PARIETARIA $x = 7, 13$

<i>ramiflora</i>	Pellitory	14	Krause 1930	M(V)	S. Eur., S.W. Asia
<i>judaica</i>		26	" "	—	Greece

BOEHMERIA (URTICA) $x = 7, 13$

<i>biloba</i>		28	Krause 1930	—	Japan
<i>nivea</i>	Rhea Fibre, Ramie	28	" "	T	Trop. Asia
<i>argentea</i>		52	" "	T	Mexico

URTICA $x = 11, 12, 13$

<i>membranacea</i>		{ 22	Fothergill 1936	—	Medit.
		{ 24	Negodi 1930		
<i>urens</i>	Dog Nettle	24, 26,	L. & L. 1942a	T	N. Temp.
<i>atrovirens</i>		26	Fothergill 1936	T	S. Europe
<i>grandidentata</i>		26	" "	T	Java
<i>pilulifera</i>	Roman N.	26	Krause 1931	T	Med.—Ind.
		52	Fothergill 1936		
<i>dioica</i>	Common Sting. N.	{ 48	Meurman 1925	VMT	N. Temp.
		{ 48	L. & L. 1942a		
<i>cannabina</i>		52	Fothergill 1936	T	A. Minor, Persia

PILEA $x = 12$

<i>cadieri</i>		48	Hamel 1939	—	Indo-China
----------------	--	----	------------	---	------------

170 CANNABINACEAE

HUMULUS $x = 8, 10$

<i>japonicus</i>	♀ : 14 + XX	Kihara & H. 1932	T	Japan, China
	♂ : 14 + XY ₁ Y ₂			
<i>lupulus</i>	Hop ♀ : 16 + X ₁ X ₁ X ₂ X ₂	Kihara 1929	B	Eurasia
	♂ : 16 + X ₁ X ₂ Y ₁ Y ₂	Ono 1937		

CANNABIS $x = 10$

<i>sativa</i> L	Hemp	20	Medvedeva 1935	MTO	C. Asia, Him.
	Ganja	(40)	Furusato 1940		

Group XI

CELASTRALES

171–181

ST

SANTALES

184–189

HST

RUTALES

194–196

(H)ST

SAPINDALES

198–206

ST

(OLACALES)

182, 183

ST

RHAMNALES

190–193

ST

MELIALES

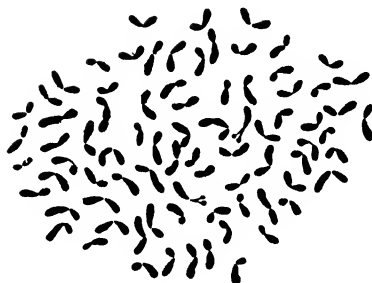
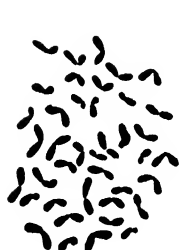
197

ST

JUGLANDALES

207, 208

T



Aesculus hippocastanum & *Ae. carnea*

171 AQUIFOLIACEAE

ILEX $x = 9, 10$

<i>opaca</i>	Amer. Holly	36	Jensen 1944	H	N. America
<i>verticillata</i>	Winterberry	36	" "	M	" "
<i>aquifolium</i>	Holly	40	Maude 1940	HMW	Eur., "W. Asia
<i>dumosa</i>		40	Andres & S. 1945	—	Brazil
<i>paraguariensis</i>	Maté,	40	" "	B	" "
	Paraguay Tea	40	E.K.J.*		
<i>serrata</i>		40	Nakajima 1942		Japan
<i>theezans</i>		40	Andres & S. 1945		Brazil
<i>vomitaria</i>	Yapon Tea	40	Jensen 1944	B	S.E: U.S.A.
<i>decidua</i>	Possum-Haw	40	" "	H	S: U.S.A.
<i>monticola</i> (<i>montana</i>)		40	" "	H	E: U.S.A.

172 EMPETRACEAE

EMPETRUM $x = 13$

<i>nigrum</i> ♂ ♀	Crowberry	{ 26	Wanscher 1933b	F	Eur., N. Asia
		{ 26	Hagerup 1927		
<i>v. hermaphroditum</i>		52	" "	H	Arctic

173 CELASTRACEAE

PACHYSTIMA $x = 8$

<i>canbyi</i>		32	Bowden 1940a	H	Virginia
---------------	--	----	--------------	---	----------

EUONYMUS $x = 8$

<i>fortunei</i> (<i>radicans</i>)		32	Bowden 1940a	H	China, Japan
<i>japonicus</i>	Jap. Sp. Tree	32	Sugiura 1931	HV	" "
<i>europaeus</i>	Spindle Tree	64	Wulff 1937b	HRu	Eur., Asia Minor
<i>americanus</i>	Strawberry Bush	64	Bowden 1940a	H	S.E: U.S.A.

CELASTRUS $x = 23$

<i>orbiculatus</i>		46	Bowden 1945a	H	Japan, China
<i>scandens</i>	Waxwork	46	" 1940a	H	E: N. America

MAYTENUS $x = 40$

<i>vitis-idaea</i>		80	Covas & S. 1947	—	Peru
--------------------	--	----	-----------------	---	------

181 STACKHOUSIACEAE

STACKHOUSIA $x = 10$

<i>monogyna</i>		20	W. D. Jackson unp.	H	Australia
-----------------	--	----	--------------------	---	-----------

185 LORANTHACEAE

STRUTHANTHUS $x = 8$

<i>angustifolius</i>		16	Covas 1949b	Par	Trop. Amer.
----------------------	--	----	-------------	-----	-------------

PHRYGILANTHUS $x = 8$

<i>flagellaris</i>		16	Schnack & C. 1947	Par	Brazil
<i>verticillatus</i> (3x7)		24	" "	Par	Chile

LORANTHUS (SCURRULA, DENDROPTHORA) $x = 8, 9$				
<i>atropurpureus</i>	16	Rauch 1936	Par	India, Malaya
<i>pentandrus</i>	16	" "	Par	Java
<i>longiflorus</i>	18	Kumar & A. 1942c	Par	Mal.—Australia
<i>rubromarginatus</i>	18	Pienaar 1952	Par	S. Africa

PSITTACANTHUS $x = 10$

<i>cuneifolius</i>	20	Schnack & C. 1947	Par	Peru
--------------------	----	-------------------	-----	------

VISCUM $x = 10, 12$

<i>album</i>	Mistletoe	20	Steindl 1935	MPar	Eur., Trop. As.
<i>articulatum</i>		24	" "	Par	Trop. Australia

186 SANTALACEAE

SANTALUM $x = 10$

<i>album</i>	Ind. Sandalwood	20	G. S. Iyengar 1937	ParMPW	Ind., Malaya
--------------	-----------------	----	--------------------	--------	--------------

THESIUM $x = 10, 12$

<i>wightianum</i>		20	L. N. Rao 1942	ParW	India
<i>montanum</i>		24	Schulle 1933	Par	Europe

BUCKLEYA $x = 15$

<i>joan</i>		30	Nakajima 1937	Par	Japan
-------------	--	----	---------------	-----	-------

OSYRIS $x = 10, 15$

<i>arborea</i>	Bischar Tea	30	L. N. Rao 1942	BM	India
<i>alba</i>		40	Schaeppi & S. 1937	Par	Medit.

PYRULARIA $x = 19$

<i>pubera</i>		38	Jensen 1939	Par	N. America
---------------	--	----	-------------	-----	------------

IODINA $x = (12) 36$

<i>rhombifolia</i>		72	Schnack & C. 1947	Par	Brazil
--------------------	--	----	-------------------	-----	--------

189 BALANOPHORACEAE

CYNOMORIUM $x = 12$

<i>coccineum</i>		24	Juel, T. 1927	ParM	Medit.
------------------	--	----	---------------	------	--------

HELOSIS $x = 18$

<i>guyannensis</i> (<i>cayennensis</i>)		36	Fagerlind 1938	Par	Trop. America
---	--	----	----------------	-----	---------------

THONNINGIA $x = 18$

<i>anguinea</i>		36	Mangenot 1947	Par	Trop. Africa
-----------------	--	----	---------------	-----	--------------

BALANOPHORA $x = ?$ (Apomixis)

<i>dioica</i>		c. 18	Panje 1934	Par	India, Burma
<i>japonica</i>		94-112	Kuwada 1928	Par	Japan

190 RHAMNACEAE

RHAMNUS $x = 10, 12, 13$

<i>frangula</i>	Alder Buckthorn	{ 20	Rutland 1941	HMW	Eur., N. Asia,
		26	Wulff 1937b		N. Africa

RHAMNUS (cont.)					
<i>californicus</i>	Coffee Berry	24	Bowden 1945b	—	California
<i>catharticus</i>	Purging B.	24	Wulff 1939a	DHM	Eur., N.As.,N.Afr.
<i>utilis</i>		24	Bowden 1945b	D	China

ZIZYPHUS $x = 10, 12, 13$

<i>oenoplia</i>		{ 20	Srinivasachar 1940	—	Tr. Asia, Austr.
		{ 48	Srinivasan 1952		
<i>sativa</i>	Chinese Jujube	{ 24	Morinaga <i>et al.</i> 1929	F	Medit., China
<i>as vulgaris</i>		{ 26	Chiarugi 1930b		
<i>jujuba</i>	Indian J.	{ 24	Morinaga <i>et al.</i> 1929		
		{ 40	Srinivasachar 1940	FFo ₁ W	India, Malaya
		{ 48, 72, 96	Srinivasan 1952		
<i>mauritiana</i>		48	" "	F	Trop. Asia
<i>rotundifolia</i>		72	" "	—	"

COLLETIA $x = 11$

<i>cruciata</i>	Anchor Pl.	22	Dolcher 1947	H	S. Brazil, Uruguay
<i>spinosa</i>		22	" "	HM	S. America

CEANOTHUS * $x = 12$

<i>americanus</i>	New Jersey Tea	24	Bowden 1940a	B	E: U.S.A.
<i>arboreus</i>		24	" 1945b	H	Calif.
<i>thyrsiflorus</i>	Blue Blossom	24	Nobs 1942	H	"
20 spp.		24	" 1942	H	W: N. America

HOVENIA $x = 12$

<i>dulcis</i>	Raisin Tree	24	Sugiura 1936b	F W	Himal.—Japan
---------------	-------------	----	---------------	-----	--------------

PALIURUS $x = 12$

<i>spina-christi</i>	Jerusalem Thorn	24	Dolcher 1947	H	S. Eur.—N. China
<i>(aculeatus)</i>					

SAGERETIA $x = 12$

<i>theezans</i>		24	Bowden 1945b	BF	Burma, China
-----------------	--	----	--------------	----	--------------

191 ELAEAGNACEAE

ELAEAGNUS $x = 14$

<i>angustifolia</i>	Oleaster,	28	Fyfe 1945*	BFH	S. Eur., W. Asia
	Trebizond Date				
<i>commutata</i>	Silverberry	28	" "	FH	S. & C. U.S.A.
<i>(argentea)</i>					
<i>pungens</i>		28	" "	FH	Japan
<i>umbellata</i>		28	" "	FH	China, Him., Jap.

HIPPOPHAE $x = 6$

<i>rhamnoides</i>	Sea Hawthorn	12, 24	Darmer 1947	H	Eur., Temp. Asia
-------------------	--------------	--------	-------------	---	------------------

SHEPHERDIA $x = 11, 13$

<i>canadensis</i>	Buffalo-berry	22	Cooper 1932	BFHN	N. America
<i>argentea</i>	Silver B.	26	Fyfe 1945*	FH	"

193 AMPELIDACEAE (VITACEAE)

TETRASTIGMA $x = 11, 13$

<i>sulcatum</i>	22	Krishnaswamy <i>et al.</i> 1954	—	S.E. Asia
<i>lanceolarium</i>	44	" "	—	"
<i>rumiscispermum</i>	52	Eichhorn 1938	—	Trop. Asia
<i>voinerianum</i>	52	" "	H	"

CISSUS $x = 12, 13, 14, 16$

<i>repens (glauca)</i>	24	Krishnaswamy <i>et al.</i> 1954	—	S.E. Asia
<i>javana (discolor)</i>	24	" "	—	"
<i>repanda (pallida)</i>	26	" "	—	Ceylon, Siam, E. Ind.
<i>heyneana</i>	28	" "	—	E. Indies
<i>gongyloides</i>	32	Langlet 1927b	H	Brazil, Peru
<i>quadrangularis</i>	c. 45	Ghimpu 1929b	VMVit	Asia, Trop. Africa

VITIS $x = 19, 20$

<i>amurensis</i>	Amur Grape Vine	38	Nebel 1929	F	E. Asia
<i>arizonica</i>	Canyon G. V.	38	Christoff 1929	F	Ariz., Mexico
<i>berlandieri</i>	Winter G. V.	38	Sax 1929	F	Texas, N. Mexico
<i>bicolor</i>	Blue G. V.	38	" "	F	E. & C. U.S.A.
<i>californica</i>	Calif. G. V.	38	Kobel 1929a	F	California
<i>candicans</i>	Mustang G. V.	38	Sax 1929	F	N. America
<i>cinerea</i>	Sweet Winter G. V.	38	Kobel 1929a	F	E: N. America
<i>coignetiae</i>	Glory G. V.	38	Nebel 1929	H	Japan
<i>doniana</i>		38	" "	—	N. America
<i>labrusca</i>	Fox G. V.	38	" "	FO	E: N. America
<i>lincecumii</i>	Post-Oak G. V.	38	Christoff 1929	—	S.C: U.S.A.
<i>longii</i>	Bush G. V.	38	Sax 1929	—	"
<i>monticola</i>	Sweet Mtn. G. V.	38	Christoff 1929	F	Texas
<i>riparia</i>	Riverbank G. V.	38	" "	FO	E: N. America
<i>rubra</i>	Red G. V.	38	" "	—	C: U.S.A.
<i>rupestris</i>	Sand G. V.	38	" "	Fs	S.E. & C. U.S.A.
<i>treleasei</i>		38	Sax 1929	—	N. America
<i>vulpina</i>	Frost G. V.	38	Nebel 1929	Fs	"

vinifera Grape Vine 38, 57, 76 Olmo 1937 ABFO S.W. Asia (*cult*)

<i>rotundifolia</i>	Muscadine	40	Branas 1932	FO	S. & C. U.S.A.
<i>riparia</i> \times <i>monticola</i>		40	de Lattin 1951	—	<i>exp.</i>
<i>vinifera</i> \times <i>rotund.</i>		39	Patel & O. 1955	—	<i>exp.</i>

AMPELOPSIS $x = 20$

<i>cordata</i>		40	Sax 1929	H	N. America
<i>heterophylla</i>		40	Mitsukuri & H. '51	H	E. Asia
<i>vitifolia</i>		40	Christoff 1929	—	Persia, Afghan.

PARTHENOCISSUS $x = 20$

<i>quinquefolia</i>	Virginia Creeper	40	Sax 1929	H	E: N. America
<i>tricuspidata</i>	Boston Ivy	40	" "	H	China, Japan

CAYRATIA (COLUMELLA) $x = ?$

<i>japonica</i>		c. 60	Mitsukuri & H. '51	H	E. Asia
-----------------	--	-------	--------------------	---	---------

194 RUTACEAE

SF1: AURANTIOIDEAE

AEGLOPSIS $x = 9$					
<i>chevalieri</i>		18	Longley 1925	—	Guinea
AFRAEGLE $x = 9$					
<i>gabonensis</i>		18	Krug 1943	—	Congo
ATALANTIA $x = 9$					
<i>citroides</i>		18	Krug 1943	HFfs	Indo-China
CLAUSENA (COOKIA) $x = 9$					
<i>lansium</i>	Wampee	18	Krug 1943	F	China
FERONIA $x = 9$					
<i>limonia</i>	Wood Apple	18	Toxopeus 1933	FReW	Ind., Bur., Cey.
MICROCITRUS (CITRUS) $x = 9$					
<i>australasica</i>		18	Krug 1943	F	Australia
MURRAYA $x = 9$					
<i>exotica</i>	Boxwood	18	Pathak <i>et al.</i> '49	HW	Polynesia As., Austr.
<i>koenigii</i>	Curryleaf	18	EKJ*	Sp	E. Indies
<i>paniculata</i>	Jasmine Orange	18	Toxopeus 1933	PSp	Tr. Asia, Austr.
CITRUS * $x = 9$ (Apomixis)					
<i>aurantium</i>	Seville Orange	18	Sugiura 1931	FFsP	Trop. Asia
<i>bergamia</i>	Bergamot	18	Nakamura 1934	FP	"
<i>celebica</i>		18	Krug 1943	—	E. Indies
<i>hystrix</i>	Sattora	18	" "	P	India, Malaya
<i>ichangensis</i>		18	" "	H	China, Assam
<i>limetta</i>	Sweet Lime	18	Nakamura 1934	FsP	Trop. Asia
" <i>limonia</i> "	Jap. Citron	18	" "	FP	"
<i>macroptera</i>		18	Krug 1943	—	N. Caled.
<i>medica</i>	Citron	18	Longley 1925	FMPV	Trop. Asia
<i>medioglobosa</i>		18	Nakamura 1934	—	Japan, <i>cult</i>
<i>mitis</i>	Calamondin	18	Longley 1925	F	<i>cult</i>
<i>nobilis</i>	Tangerine, Mandarin O.	18	Nakamura 1934	FPVit	China, <i>cult</i>
" <i>obovata</i> "		18	" "	F	<i>cult</i>
<i>pyriformis</i>	Ponderosa Lemon	18	" "	F	Java
<i>tachibana</i> (<i>leiocarpa</i>)		18	" "	F	Japan, Korea
<i>tamura</i>		18	" "	F	Japan
<i>webberi</i>		18	Krug 1943	—	Philip. Is.
25 other species		18	Nakamura 1934, 1942	—	E. Asia
<i>aurantifolia</i>	Acid Lime, {	18	Longley 1925	FP	Trop. Asia
	Tahiti {	19-21, 27	Krug & B. 1943		
	Lime {	27	Bacchi 1940		
<i>natsudaidai</i>		18, 27, 36	Lapin 1937a	F	Japan
<i>paradisi</i>	Grape Fruit	18, 27, 36	" "	F	E. Asia
<i>sinensis</i>	Sweet O. {	18, 27, 36	" "	FVit	China, <i>cult</i>
		45	Krug 1943		
<i>grandis</i>	Pummelo	18, 36	Frost, Krug 1943	F	Java
<i>limon</i>	Lemon	18, 36	Krug 1943	FVit	<i>cult</i>
<i>madurensis</i>		18, 36	Nakamura 1942	—	China, Japan

CITRUS (cont.)

<i>maxima</i>	Shaddock	18, 36	Lapin 1937a	F	Trop. Asia
<i>microcarpa</i>	(<i>japonica</i>)	18, 36	Nakamura 1934	F	Japan
<i>reticulata</i>	Dancy Tang.	18, 36	Frost, Krug 1943	F	<i>cult</i>
<i>unshiu</i>	Satsuma O.	18, 36	Lapin 1937a	FP	Japan

FORTUNELLA $x = 9$

<i>crassifolia</i>	Cumquat	18	Longley 1925	F	China
<i>japonica</i>	Round C.	18	" "	F	Japan, China
<i>margarita</i>	Oval C.	18	Lapin 1937a	F	" "
<i>obovata</i>		18	Nakamura 1941	F	China - "
<i>hindsii</i>	Cumquat	18, 36	Longley 1925	F	"

PONCIRUS $x = 9$

<i>trifoliata</i>	Trifoliolate O.	{ 18 18, 36	Longley 1925 Lapin 1937a	FP	Japan
-------------------	-----------------	----------------	-----------------------------	----	-------

TRIPHASIA $x = 9$

<i>trifolia</i>	Chinese Lime	{ 18 36	Longley 1925 Krug 1943	F	Trop. Asia
-----------------	--------------	------------	---------------------------	---	------------

AEGLE $x = 9$

<i>marmelos</i>	Bael T.	36	EKJ*	DFM	India
-----------------	---------	----	------	-----	-------

SF2: RUTOIDEAE

BORONIA* $x = 7, 8, 9, 11$

$x = 7$					
<i>megastigma</i>		14	Smith-White 1954b	H	W. Australia
<i>pulchella</i>		14	" "	H	"

$x = 8$					
<i>elator</i>		16	" "	H	"
<i>gracilipes</i>		16	" "	H	"
<i>fraseri</i>		32	" "	H	N.S.W.
<i>ledifolia</i>		32	" "	—	"
<i>mollis</i>		32	" "	—	"
<i>triphylla</i>		32	" "	—	"

$x = 9$					
<i>barkeriana</i>		18	" "	—	"
<i>fastigiata</i>		18	" "	H	W. Australia
<i>nematophylla</i>		18	" "	—	"
<i>parviflora</i>		18	" "	—	N.S.W.
<i>purdieana</i>		18	" "	—	W. Australia
<i>tenuis</i>		18	" "	—	"
<i>viminea</i> & 2 spp.		18	" "	H	"
<i>crenulata</i>		18, 36	" "	H	"
<i>crassifolia</i>		18, 36	" "	—	"

<i>anemonifolia</i>		36	" "	H	N.S.W.
<i>polygalifolia</i>		36	" "	H	"
<i>ramosa</i>		36	" "	—	W. Australia
<i>rigens</i>		36	" "	—	N.S.W.
<i>coerulescens</i>		36, 72	" "	—	S. Australia

$x = 11$					
<i>floribunda</i>		22	" "	—	N.S.W.

BORONIA (cont.)					
<i>microphylla</i>	22	Smith-White 1954b	—		N.S.W.
<i>pilosa</i>	22	" "	H		"
<i>pinnata</i>	22	" "	H		"
<i>serrulata</i>	22	" "	H		"
<i>thujona</i>	22	" "	—		"
CHORILAENA $x = 7$					
<i>hirsuta</i>	28	Smith-White 1954b	—		W. Australia
<i>quercifolia</i>	28	" "	—		"
GELEZNOWIA $x = 7$					
<i>verrucosa</i>	28	Smith-White 1954b	—		W. Australia
PHILOTHECA $x = 7$					
<i>australis</i>	28	Smith-White 1954b	H		N.S.W.
<i>miniata</i>	28	" "	—		W. Australia
<i>reichenbachiana</i>	28	" "	—		N.S.W.
ASTEROLASIA $x = 7, 13$					
<i>dielsii</i>	26	Smith-White 1954b	—		W. Australia
<i>correifolia</i>	28	" "	—		N.S.W.
ERIOSTEMON $x = 7, 17$					
<i>buxifolius</i>	28	Smith-White 1954b	H		N.S.W.
<i>hispidulus</i>	28	" "	—		"
<i>myoporoides</i>	28	" "	H		"
<i>scaber</i>	28	" "	H		"
<i>brevifolius</i>	56	" "	—		S. Australia
<i>obovalis</i>	56	" "	H		N.S.W.
<i>spicatus</i>	56	" "	—		W. Australia
<i>lanceolatus</i>	34	" "	—		N.S.W.
CORREA $x = 8$					
<i>alba</i>	32	Smith-White 1954b	H		N.S.W.
<i>lawrenciana</i>	32	" "	H		"
<i>speciosa</i>	32	" "	H		"
PHEBALIUM* $x = 8$					
<i>dentatum</i> & 2 spp.	32	Smith-White 1954b	H		N.S.W.
<i>ralstoni</i>	32	" "	—		"
<i>squameum</i>	32	" "	—		Tasmania
<i>squamulosum</i>	32	" "	H		N.S.W.
<i>ozothamnoides</i>	64	" "	—		"
<i>drummondii</i>	64	" "	—		W. Australia
<i>microphyllum</i>	64	" "	—		"
BOENNINGHAUSENIA $x = 9$					
<i>albiflora</i> China Rue	18	Sugiura 1936a	M		Himal., Japan
RUTA $x = 9$					
<i>patavina</i>	18	Negodi 1939	HM		S. Europe
<i>chalepensis</i>	36	" "	H		Medit.
<i>montana</i>	36	" "	—		Medit., Cauc.
<i>graveolens</i> Rue	{ 72 81	" " Revell 1945*	HMP		S. Europe

ZIERIA $x = 9$

<i>pilosa</i>	36	Smith-White 1954b	H	N.S.W.
<i>smithii</i>	36, 72	" "	H	"
<i>aspalathoides</i>	72	" "	—	"
<i>cytisoides</i>	72	" "	—	"
<i>laevigata</i>	72	" "	H	"

DICTAMNUS $x = 9?$

<i>albus</i>	Dittany, Burning Bush	{ 30 Negodi 1939 36 Bowden 1945b	HP	S. Eur.—N. China
--------------	--------------------------	-------------------------------------	----	------------------

EVODIA $x = 9$

<i>micrococca</i>	36	Smith-White 1954b	—	N.S.W.
<i>daniellii</i>	72	Bowden 1945b	H	N. China, Korea
<i>fraxinifolia</i>	72	" "	H	Himal., Malaya
<i>hupehensis</i>	72	" "	H	C. China

COLEONEMA $x = 9$

<i>pulchrum</i>	36	Smith-White 1954b	H	S. Africa
-----------------	----	-------------------	---	-----------

CALODENDRUM $x = 9$

<i>capense</i>	54	Smith-White 1954b	H	S. Africa
----------------	----	-------------------	---	-----------

GEIGERA $x = 9$

<i>parviflora</i>	108	Smith-White 1954b	H	N.S.W.
-------------------	-----	-------------------	---	--------

DIPLOLAENA $x = 13$

<i>grandiflora</i>	26	Smith-White 1954b	H	W. Australia
--------------------	----	-------------------	---	--------------

CROWEA $x = 19$

<i>dentata</i>	38	Smith-White 1954b	—	W. Australia
<i>saligna</i>	38	" "	H	N.S.W.

ZANTHOXYLUM (XANTHOXYLUM) $x = ?$

<i>americanum</i>	Prickly Ash	68 Walker 1942	W	E: N. America
<i>piperitum</i>	Jap. Pepper T.	70 Nakajima 1937b	OSp	N. China, Japan
<i>clava-herculis</i>		c. 72 Bowden 1940a	W	S.E. U.S.A.

SF3 : TODDALIOIDEAE**ACRONYCHIA** $x = 9$

<i>laevis</i>	36	Smith-White 1954b	H	E. Aust., N. Caled.
---------------	----	-------------------	---	---------------------

195 SIMARUBACEAE**QUASSIA** $x = 9?$

<i>amara</i>	Surinam Quassia	36 EKJ*	M	Guiana
--------------	-----------------	---------	---	--------

PICRASMA $x = ?$

<i>quassoides</i>		50 Nakajima 1942	M	Himalayas
<i>excelsa</i>	Jamaica Q.	c. 60 EKJ*	M	W. Indies

AILANTHUS $x = ?$

<i>excelsa</i>	62	Pathak <i>et al.</i> 1949	—	India
----------------	----	---------------------------	---	-------

196 BURSERACEAE

COMMIPHORA $x = 13$					
<i>berryi</i>	Mullu kiluvai	26	Krishnaswamy & R. 1949	H	Trop. Ind. & Afr.

197 MELIACEAE

MELIA $x = 14$					
<i>azedarach</i>	Persian Lilac (of India)	28	Bowden 1945a	MOW	Himalayas
<i>azadirachta</i>	Margosa, Neem	28	Pathak <i>et al.</i> 1949	DMOW	India

FLINDERSIA $x = 18$					
<i>bourjotiana</i>		36	Smith-White 1954b	W	Australia
<i>oxleyana</i>	Yellow wood	36	" "	W	"
<i>pubescens</i>		36	" "	—	"
<i>schottiana</i>		36	" "	—	"
<i>australis</i>	Native Teak	108	" "	W	E. Australia

SWIETENIA $x = ?$					
<i>mahogoni</i>	Mahogany	46-48	Krishnaswamy & R. 1949	W	C. America

CEDRELA $x = ?$					
<i>odorata</i>	W.I. Cedar	50-52	Simmonds 1954	W	Trop. Amer., W.I.
<i>toona</i>	Toona	56	Singh 1951	W	India, Burma

DYSOXYLUM $x = ?$					
<i>ramiflorum</i>		c. 72	Paetow 1931	W	Java

198 SAPINDACEAE

CARDIOSPERMUM $x = 11$					
<i>halicacabum</i>	Heart Seed	22	Kadry 1951	H(V)	Tropics

KOELREUTERIA $x = 11$					
<i>formosana</i>		22	Bowden 1945b	H	Formosa
<i>paniculata</i>	Golden Rain T.	{ 22 30?	" " Eichhorn & F. 1936	HNV	Ch., Kor., Japan

LITCHI $x = ?$					
<i>chinensis</i>	Lichi	{ 28 30	Chaudhuri 1940 EKJ*	F	China

EUPHORIA (NEPHELIUM) $x = 15$					
<i>longana</i>	Longyen	30	Bhadhuri & B. 1949	FH	India

MELICocca $x = 16$					
<i>bijuga</i>	Mamoncillo, Genip	32	Simmonds 1954	F	Trop. America

AESCULUS $x = 20$					
<i>parviflora</i>	Common B.	40	Dobronz 1935	HN	S.E. U.S.A.
<i>flava (octandra)</i>	Yellow Buckeye	40	Upcott 1936b	HSh	E. U.S.A.
<i>hippocastanum</i>	Horse Chestnut	40	" "	Sh	Balkans
<i>pavia</i>	Red B.	40	" "	H	S.E. U.S.A.

AESCULUS (cont.)

<i>plantierensis</i> (<i>carnea</i> × <i>hippo</i>)	60	Upcott 1936b	HSh	<i>cult</i>
<i>carnea</i> (<i>pavia</i> × <i>hippo</i>)	80	„ „	H	„

200 ACERACEAE

ACER x = 13

<i>argutum</i>		26	Takizawa 1952	H	Japan
<i>campestre</i>	Hedge Maple	26	Foster 1933	HW	Eur., W. Asia
<i>circinatum</i>	Vine M.	26	„ „	HW	W: N. America
<i>cissifolium</i>		26	Takizawa 1952	H	Japan
<i>crataegifolium</i>		26	„ „	H	„
<i>diabolicum</i>		26	„ „	H	„
<i>ginnala</i>		26	„ „	H	„
<i>griseum</i>	Paper Bark M.	26	Foster 1933	HW	Ch., Manch., Jap.
<i>japonicum</i>		26	Takizawa 1952	H	W. China
<i>mandschuricum</i>	Manch. M.	26	Foster 1933	HW	Japan
<i>miyabei</i>		26	„ „	HW	Manch., Korea
<i>mono</i> (<i>pictum</i>)	Painted M.	26	Takizawa 1952	H	Japan
<i>negundo</i>	Box Elder	26	Foster 1933	HW	China—Manch.
<i>nikoense</i>	Nikko M.	26	„ „	HW	E: N. America
<i>palmatum</i> (<i>ornatum</i>)	Jap. M.	26	Takizawa 1952	H	Japan, C. China
<i>pseudosieboldianum</i>		26	Foster 1933	HW	China, Korea
<i>rufinerve</i>	Red-vein M.	26	„ „	HW	Manch., Korea
<i>saccharum</i>	Sugar M.	26	Taylor 1920	HW	Japan
<i>tschonoskii</i>		26	Foster 1933	SuW	E: N. America
<i>platanoides</i>	Norway M.	26, 39	Meurman 1933	HW	Japan
				Su	Eur., S.W. Asia
<i>carpinifolium</i>	Hornbeam M.	c. 52	Taylor 1920	HW	Japan
<i>pseudoplatanus</i>	Sycamore	52	Foster 1933	(ASu)W	Eur., S.W. Asia
<i>saccharinum</i>	Silver M.	52	Taylor 1920	HSu	E: N. America
<i>rubrum</i>	Red M.	c. 78, c. 104	Duffield 1943	H	„ „

201 SABIACEAE

SABIA x = 12

<i>japonica</i>	24	Sugiura 1936a, b	H	Japan
-----------------	----	------------------	---	-------

MELIOSOMA x = 16

<i>wightii</i>	32	Raju 1952	—	India
----------------	----	-----------	---	-------

204 STAPHYLEACEAE

STAPHYLEA x = 13

<i>bumalda</i>	Bladder Nut	26	Foster 1933	H	Japan
<i>pinnata</i>	„ „	26	„ „	H	Eur., W. Asia
<i>colchica</i>	„ „	52	„ „	H	Caucasus
<i>trifolia</i>	„ „	78	„ „	H	N. America

205 ANACARDIACEAE

PISTACIA x = 12, 14, 15

<i>lentiscus</i>	Mastic	24	Haran, Zohary 1953	MPRe	Medit.
<i>atlantica</i> v. <i>latifolia</i>		28	„ „ „	Re	S.W. As., N. Afr.

PISTACIA (cont.)						
<i>vera</i>	Pistachio Nut	30	Haran, Zohary 1953	N		Turkest., <i>cult</i>
SCHINUS $x = 14$						
<i>molle</i>	Peruvian Mastic T.	28	Schnack & C. 1947	HRe		Trop. Amer.
<i>polygamus</i>		28	" "	—		Argentina
ASTRONIUM $x = 15$						
<i>urundeuva</i>		30	Covas & S. 1947	—		Brazil
RHUS $x = 15$						
<i>succedanea</i>	Jap. Veget. Wax	30	Sugiura 1936b	Re		Jap., Ch., Himal.
<i>toxicodendron</i>	Poison Oak	30	Grimm 1912	M		N. America
SPONDIAS $x = 16$						
<i>mangifera</i>	Hog Plum	32	Banerji 1936	FV		Trop. Asia
<i>purpurea (mombin)</i>	Spanish P.	32	Simmonds 1954	F		Trop. America
MANGIFERA $x = 10$ (Apomixis)						
<i>caloneura</i>		40	Mukherjee 1950	—		Burma
<i>sylvatica</i>		40	" "	—		Himalayas
<i>indica</i>	Mango	40	" "	FVItW		India, Malaya
SEMECARPUS $x = 15?$						
<i>anacardium</i>	Marking Nut T.	60	EKJ*	D		Tr. Asia & Austr.
ANACARDIUM $x = ?$						
<i>occidentale</i>	Cashew Nut T.	42	EKJ*	AFNVit		Trop. America

207 JUGLANDACEAE

CARYA $x = 16$						
<i>cordiformis</i>	Bitternut	32	Woodworth 1930c	H		N. America
<i>laneyi</i>		32	" "	W		"
<i>laciniosa</i>	King Nut	32	" "	N		"
<i>ovata</i>	Shagbark Hick.	32	" "	W		"
<i>alba</i>	Mokernut	64	" "	WN		"
<i>glabra</i>	Pignut	64	" "	DW		"
<i>ovalis</i>	False Shagbark	64	" "	W		"
<i>tomentosa</i>	Hickory	64	" "	N		"
JUGLANS $x = 16, 17?$						
<i>cinerea</i>	Butternut	32	Woodworth 1930c	NWVit		E.N. America
<i>intermedia</i>		32	McKay & M. 1941	N		W. Asia, Himal.
<i>insularis</i>		32	Bowden 1945a	—		Cuba
<i>mandschurica</i>	Manch. W.	32	Woodworth 1930c	W		Manchuria
<i>nigra</i>	Black W.	32	" "	WNVit		N. America
<i>regia</i>	English W.	32	" "	NOWVit		S.E. Eur.—China
<i>rupestris</i>	Texas Black W.	32	" "	W		W: N. America
<i>sieboldiana</i>	Giant W.	32	" "	NW		Japan
<i>californica</i>	Cal. Black W.	34?	Babcock 1915	W		California
<i>notha</i>		32	Woodworth 1930c	HW		<i>cult</i>
PTEROCARYA $x = 16$						
<i>fraxinifolia</i>		c. 32	Woodworth 1930c	HW		Cauc.—Persia
<i>stenoptera</i>		c. 32	" "	HW		China
<i>rehderiana (fraxinifolia × sten)</i>		32	" "	HW		<i>cult</i>

Group XII

UMBELLIFLORAE

209-213

HST



Silaum silaus

209 CORNACEAE

AUCUBA $x = 8$					
<i>chinensis</i>	16	Kihara & Y. 1935	H	China	
<i>japonica</i>	32	Meurman 1929a	H	Him.—Japan	
	32+2B	Yamamoto 1937			
<i>dentata</i>	32	Meurman unp.	H	<i>cult</i>	
<i>longifolia</i>	32	„ „	H	„	
COROKIA* $x = 9$					
<i>cotoneaster</i> & 1 sp.	18	Hamel 1953	H	New Zealand	
GRISELINIA $x = 9$					
<i>littoralis</i>	36	Wanscher 1933a	H	New Zealand	
MACROCARPIUM (CORNUS) $x = 9$					
<i>officinale</i>	18	Sugiura 1936b	H	China, Japan	
<i>mas</i> Cornelian Cherry	18, 27	D'Amato 1946	HW	Balk., S.W. Asia	
CORNUS* $x = 10, 11$					
<i>alternifolia</i> Pagoda Dogwood	20	Dermen 1932b	H	N. America	
<i>controversa</i>	20	„ „	H	Him.—Japan	
<i>alba</i> Tartarian D.	22	„ „	H	N. Asia	
<i>amomum</i> Silky D. & 7 spp.	22	„ „	H	N. America	
<i>arnoldiana</i>	22	„ „	H	<i>cult</i>	
<i>bretschneideri</i>	22	„ „	H	„	
<i>coreana</i>	22	„ „	H	Korea	
<i>paucinervis</i>	22	„ „	H	C. China	
<i>sanguinea</i> Blood Twig D.	22	„ „	HW	Eur., N.W. Asia	
CYNOXYLON (CORNUS) $x = 11$					
<i>floridum</i> Flowering D.	22	Dermen 1932b	HMW	E: U.S.A.	
DENDROBENTHAMIA (CORNUS) $x = 11$					
<i>capitata</i>	22	Wanscher 1933b	H	Him., China	
<i>japonica (kousa)</i> Kousa	22	Dermen 1932b	H	China, Japan	
CHAMAEPERICLYMENUM (CORNUS) $x = 11$					
<i>suecicum</i>	22	Wulff 1939b	H	Arctic	
<i>canadense</i> Bunch Berry	44	Dermen 1932b	H	N.E. Asia, N. Amer.	
HELWINGIA $x = ?$					
<i>japonica</i>	120	Nakajima 1944	H	Japan	
<i>(rusciflora)</i>	{ c. 72, 144	Wanscher 1933a			

210 ALANGIACEAE

ALANGIUM (MARLEA) $x = 8, 11$					
<i>lamarckii</i>	16	Gopinath 1945	—	O.W. Tropics	
<i>begonifolium</i>	22	Wanscher 1933a	H	India—Japan	

211 NYSSACEAE

DAVIDIA $x = ?$					
<i>involucrata</i> Handkerchief T.	c. 40	Dermen 1932b	H	China	

NYSSA $x = 11$

sylvatica Black Tupelo 44 Dermen 1932b H S.E: U.S.A.

212 ARALIACEAE

PANAX $x = 11, 12$

<i>fruticosa</i>	Ginseng	{	22 Gopinath 1944	H	Trop. Asia
			24 Wanscher 1933a		
<i>japonicum</i>	Jap. G.		24 M. & S. 1935	HM	Japan
<i>ginseng</i>	Chinese G.		44 Sugiura 1936a	HM	Manch., Korea

FATSIA (TETRAPANAX) $x = 12$

japonica Rice-paper Plant 24 Sugiura 1931 HT Japan, Formosa

ARALIA $x = 12$

<i>filicifolia</i>		24 Wanscher 1933a	HM	Pacific Is.
<i>nudicaulis</i>	Virg. Sarsaparilla	24 Bowden 1945a	HM	N. America
<i>spinosa</i>		24 " "	—	" "
<i>californica</i>		48 " "	—	California
<i>cachemirica</i>		48 Wanscher 1933a	HM	Himal.

HEDERA $x = 12$

<i>australiana</i>		24 Gopinath 1944	—	Australia
<i>helix</i>	Ivy	48 Jacobsen 1954	HM	Eur., Asia Minor
<i>v. hibernica</i>		96 " "		Ireland
<i>canariensis</i>		96 " "	—	Medit., Canaries
<i>colchica</i>		192 " "	H	Cauc.—Persia

NOTHOPANAX $x = ?$

sp. 40 Nishiyama & K. 1942

ACANTHOPANAX (KALOPANAX) $x = ?$

<i>aculeatus</i>	c. 54	Wanscher 1933a	H	E. Asia
<i>sessiliflorus</i>	c. 54	" "	H	N. China
<i>leucorrhizus</i>	c. 127	" "	H	E. Asia

213 UMBELLIFERAE

Order of the Tribes with their Basic Numbers

I	Ammieae: 6, 7, 8, 9, 10, 11, 12	VI	Laserpitieae: 7, 8, 9, 11
II	Scandiceae: 6, 7, 8, 9, 10, 11	VII	Smyrnieae: 9, 11
III	Saniculeae: 7, 8	VIII	Coriandreae: 11
IV	Hydrocotyleae: 8, 9, 10, 11	IX	Peucedaneae: 6, 10, 11
V	Dauceae: 8, 9, 10, 11		

TRIBE I: AMMIEAE

PTYCHOTIS $x = 6$

ammoides 12 Gardé & G. 1949 — Medit.

CICLOSPERMUM $x = 7$

ammi 14 Gardé & G. 1951 — Medit.

BUPLEURUM $x = 7, 8$

<i>fruticosum</i>	Shrub Thorowax	14	Gardé & G. 1951	M?	Medit.
<i>paniculatum</i>		14	" 1949	—	W. Medit.
<i>falcatum</i>		28	Suzuka 1950	—	Eurasia
<i>aureum</i>		16	Håkansson 1953	—	W. Europe
<i>candollii</i>		16	Wanscher 1932	—	Himalayas
<i>gerardi</i>		16	Gardé & G. 1951	—	Eur., N. Africa
<i>longifolium</i>		16	Wanscher 1931	—	Europe
<i>rotundifolium</i>	Thorowax	{ 16	Tamamschjan 1933	Sp	"
		22?	Melderis 1930		
<i>tenuissimum</i>		16	Gardé & G. 1949	—	Portugal, Moroc.

BERULA $x = 9$

<i>erecta</i>		18	Scheerer 1940	—	N. Temp.
---------------	--	----	---------------	---	----------

TRINIA $x = 9$

<i>glauca</i>	Honewort	18	Gardé & G. 1949	—	W. Europe
---------------	----------	----	-----------------	---	-----------

CARUM $x = 9, 10, 11$

<i>copticum</i>		18	Shah 1953	Sp	N. Afr., N. Asia
<i>roxburghianum</i>		18	Sharma & G. 1954	Sp	India
<i>carvi</i>	Caraway	20	Gardé & G. 1949	Sp	Eur., N. & S.W. A.
<i>verticillatum</i>		20	" "	—	Europe
<i>bulbocastanum</i>		22	Schulz-Gaebeel 1930	—	Eur., N. Asia
<i>rigidulum</i>		22	" "	—	Italy

PIMPINELLA $x = 9, 10$

<i>major</i>		18	Håkansson 1953	—	Eur., Cauc.
<i>peregrina</i>		18	Schulz-Gaebeel 1930	—	S. Eur., Asia M.
<i>rotundifolia</i>		18	Håkansson 1953	—	Caucasus
<i>trigium</i>		18	Gardé & G. 1949	—	S. Eur.—India
<i>villosa</i>		18	" "	—	W. Medit.
<i>saxifraga</i>	Burnet Saxifrage	18, 36	Håkansson 1953	M	Eur., N. Asia
<i>anisum</i>	Anise	{ 18	Schulz-Gaebeel 1930	MSp	Greece, Egypt
		20	Tamamschjan 1933		
<i>aromatica</i>		20	" "	—	Caucasus
<i>adscendens</i>		22	Shah 1953	—	India

SESELI * $x = 9, 10, 11$

<i>bocconi</i> & 4 spp.		18	Gardé & G. 1949	—	Sicily
<i>libanotis</i>		{ 18	" "	—	Eur., S.W. Asia
		22	Wanscher 1932		
<i>gummiferum</i>		20	Gardé & G. 1949	—	Asia Minor
<i>annuum</i>		22	Håkansson 1953	—	Eur., W. Asia
<i>montanum</i>		22	Favarger 1953	—	S. Europe
<i>tortuosum</i>		22	Gardé & G. 1949	—	S. Eur.—Cauc.

PETROSELINUM $x = 9, 11$

<i>segetum</i>	Corn Caraway	18	Gardé & G. 1951	—	Eur., Asia M., N. Afr.
<i>crispum</i>	Parsley	22	Rutland 1941	Sp	Eur., W. Asia, <i>cult</i>
<i>as sativum</i>		23	Tamamschjan 1933		

AETHUSA $x = 10$

<i>cynapium</i>	Fool's Parsley	20	Håkansson 1953	—	Eur., S.W. Asia
-----------------	----------------	----	----------------	---	-----------------

AMMI $x = 10, 11$					
<i>visnaga</i>		{ 20	Gardé & G. 1951	—	S. America
<i>majus</i>		{ 22	Covas & S. 1947	—	Medit., Abyss.
		22	Gardé & G. 1951	—	
CRITHMUM $x = 10, 11$					
<i>maritimum</i>	Samphire	{ 20	Gardé & G. 1951	Sp	Europe
		{ 22	Wanscher 1932		
SIUM $x = 10, 11$					
<i>latifolium</i>	Water Parsnip	20	Håkansson 1953	(V)	Eur., N. Amer.
<i>sisarum</i>	Skirret	22	„ „	R	W. Asia
ACIPHYLLA $x = 11$					
<i>squarrosa</i>		22	Wanscher 1933a	—	New Zealand
<i>traversii</i>		22	„ „	—	„
ANETHUM (PEUCEDANUM) $x = 11$					
<i>graveolens</i>	Dill	22	Tamamschjan 1933	Sp	Medit., S.W. Asia
APIUM (HELOSCIADIUM) $x = 11$					
<i>graveolens</i>	Celery	22	Shah 1953	SpV	Eur.—N. India
<i>inundatum</i>		22	Scheerer 1939	—	Europe
<i>nodiflorum</i>		22	Wulff 1939b	—	„
<i>prostratum</i>	Australian C.	22	Whitaker 1941	V	Australia
<i>prostratum</i> \times <i>graveolens</i> (3x)		33	„ „	—	exp.
ATHAMANTHA $x = 11$					
<i>matthioli</i>		22	Wanscher 1931	—	Medit.
CICUTA $x = 11$					
<i>virosa</i>	Cowbane	22 (44)	Melderis 1930	—	N. Eurasia
CONOPODIUM $x = 11$					
<i>capillifolium</i>		22	Gardé & G. 1949	—	Portugal
CORTIA $x = 11$					
<i>hookeri</i>		22	Wanscher 1933a	—	Himalayas
CRYPTOTAENIA $x = 11$					
<i>canadensis</i>		22	Kihara <i>et al.</i> 1931	—	N. America
FALCARIA $x = 11$					
<i>vulgaris</i>		22	L. & L. 1942	—	Eur., W. Asia
FOENICULUM $x = 11$					
<i>piperitum</i>		22	Gardé & G. 1949	—	S. Europe
<i>vulgare</i>	Fennel	22	„ „	MSp	Medit.
KUNDMANNIA $x = 11$					
<i>scula</i>		22	Gardé & G. 1949	—	Medit.
LIGUSTICUM $x = 11$					
<i>scoticum</i>	Scotch Lovage	22	Wanscher 1932	M	N. W. Europe
<i>japonicum</i>		22	M. & S. 1935	H	Japan
<i>mucronatum</i>		22	Håkansson 1953	—	Siberia

MEUM $x = 11$				
<i>athamanticum</i> Spiguel	22	Håkansson 1953	—	Europe
OENANTHE $x = 10, 11$				
<i>benghalensis</i>	20	Sharma & G. 1954	—	India
<i>aquatica</i>	22	Wulff 1937a	M	Eur., N. Asia
<i>crocata</i>	22	Gardé & G. 1949	—	W. Europe
<i>fistulosa</i> Water Dropwort	22	Wulff 1939a	M	Eur., S.W. Asia
<i>lachenalii</i>	22	" 1937a	M	Eur., Cauc., Alg.
<i>pimpinelloides</i>	22	Håkansson 1953	—	Eur., Asia M.

RIDOLFIA $x = 11$				
<i>segetum</i>	22	Gardé & G. 1951	—	Medit.

SELINUM $x = 11$				
<i>carvifolia</i>	22	Schulz-Gaebel 1930	—	Eur., W. Asia

SILAUM $x = 11$				
<i>silaus</i> Pepper Saxifrage	22	Maude 1939	—	Eur., Sib.

TROCHISCANTHES $x = 11$				
<i>nodiflorus</i>	22	Wanscher 1931	—	S. Europe

AEGOPODIUM $x = 11$				
<i>podagraria</i> Gout Weed	{ 22	Gardé & G. 1951	M	Eur., N. Asia
	44	Håkansson 1953		

CNIDIUM $x = 12$				
<i>ajanense</i>	24	M. & S. 1935	—	N. Asia

TRIBE II: SCANDICEAE

TORILIS $x = 6, 8, 11$				
<i>neglecta</i>	12	Gardé & G. 1949	—	S. Europe
<i>japonica</i> Hedge Parsley	16	Melderis 1930	—	N. Temp.
<i>nodosa</i>	22	Gardé & G. 1949	—	Eur., W. Asia

CAUCALIS $x = 6, 10$				
<i>leptophylla</i>	12	Wanscher 1932	—	Eur., Medit.
<i>lappula (daucoides)</i>	20	" "	—	Eurasia
<i>latifolia</i> Bur Parsley	c. 32	" "	—	"

PETAGNIA $x = 7$				
<i>saniculifolia</i>	42	Wanscher 1933a	—	Sicily

ANTHRISCUS $x = 7, 8, 9$				
<i>tenerrimus</i>	14	Wanscher 1933a	—	Greece, Asia M.
<i>sylvestris</i> Cow Parsley	{ 16	Wanscher 1931	—	Eur., N. Asia
	18	Tamamschjan 1933		
<i>fumarioides</i>	{ 16	Wanscher 1931	—	Europe
	18	Schulz-Gaebel 1930		
<i>cerefolium</i> Chervil	18	Wanscher 1931	Sp	Eur., S.W. & N. Asia
<i>neglecta</i> Bur Chervil	18	Wanscher 1931	—	Eur., W. Asia

SCANDIX* $x = 8$					
<i>pecten-veneris</i>	Shepherd's Needle	16	Wanscher 1931	—	Eur., S.W. Asia
<i>pinnatifida</i>	& 2 spp.	16	Gardé & G. 1949, '54	—	Medit., S.W. Asia
<i>macrorrhyncha</i>		32	„ 1954	—	Asia Minor
ASTRODAUCUS $x = 10$					
<i>orientalis</i>		20	Wanscher 1933a	—	Cauc., Persia
ORLAYA $x = 10$					
<i>grandiflora</i>		20	Reese 1952a	—	Eur., S.W. Asia
CHAEROPHYLLUM $x = 11$					
<i>aromaticum</i>		22	Wanscher 1932	—	Europe
<i>aureum</i>		22	Håkansson 1953	—	Eur., Asia M.
<i>bulbosum</i>	Chervil	22	„ „	R	„ „
<i>hirsutum</i>		22	Wanscher 1931	—	„ „
<i>temulum</i>	Rough Chervil	22	Wulff 1939a	—	Eur., Cauc., N. Afr.
MYRRHIS $x = 11$					
<i>odorata</i>	Myrrh	22	Wanscher 1931	Sp	S. Eur., Cauc.
OSMORHIZA $x = 11$					
<i>aristata</i>		22	Wanscher 1932	—	N. America
<i>longistylis</i>		22	„ „	—	„
MOLOSPERMUM $x = 11$					
<i>peloponnesiacum</i>		44	Håkansson 1953	—	W. Medit.

TRIBE III: SANICULEAE

ASTRANTIA $x = 7$					
<i>helleborifolia</i>		14	Wanscher 1932	—	Caucasus
<i>minor</i>		14	Håkansson 1953	—	S. Europe
<i>major</i>		14	Wanscher 1932	H	Europe—Cauc.
<i>v. biebersteinii</i>		28	Håkansson 1953		
ERYNGIUM* $x = 7, 8$					
<i>amethystinum</i>		14	Tamamschjan 1933	H	Europe
<i>campestre</i>	Eryngo	14	Håkansson 1953		
		28	Gardé & G. 1949,	M	Eur., C. Asia
		28	Reese 1953		
<i>alpinum</i>	& 4 spp.	16	Wanscher '32, '33a	—	Europe
<i>dichotomum</i>	& 4 spp.	16	Gardé & G. 1949, '51	—	Medit.
<i>maritimum</i>	Sea Holly	16	„ „ 1951	HR	Eur., Asia M.
<i>pandanifolium</i>		48	„ „ „	—	Brazil
<i>aquaticum</i> (<i>yuccaefolium</i>)		96	Bowden 1945b	—	E: U.S.A.
HACQUETIA $x = 8$					
<i>epipactis</i>		16	Wanscher 1933a	H	Europe
LAGOECIA $x = 8$					
<i>cumbnoides</i>		16	Tamamschjan 1933	—	Medit.

SANICULA *	$x = 8$				
<i>europaea</i>	Sanicle	16	Wanscher 1931	M	Eur., N. Asia
<i>arctopoides</i>	& 12 spp.	16	Bell 1954	—	W: N. America
<i>crassicaulis</i>		32, 48, 64	„ „	—	W: N. & S. Amer.

TRIBE IV: HYDROCOTYLEAE

AZORELLA	$x = 8$				
<i>pedunculata</i>		16	Wanscher 1932	—	S. America
<i>trifurcata</i>		16	„ „	—	„
BOWLESIA	$x = 8$				
<i>tenera</i>		16	Håkansson 1953	—	Andes
DRUSA	$x = 8$				
<i>oppositifolia</i>		16	Wanscher 1933a	—	Canaries
HYDROCOTYLE	$x = 8, 9, 11$				
<i>asiatica</i>		18	Sharma & G. 1954	—	India
<i>moschata</i>		{ c. 36	Tamamschjan 1933	—	New Zealand
		48	Wanscher 1932	—	
<i>novae-zealandiae</i>		48	„ 1933a	—	
<i>umbellata</i>		48	„ 1932	—	O.W. Tropics
<i>vulgaris</i>	Pennywort	c. 96	Håkansson 1953	—	Eur., N. Afr.
<i>bonariensis</i>		22	Covas & S. 1946	—	Tropics
ACTINOTUS	$x = 10$				
<i>helianthi</i>	Flannel Fl.	20	Smith-White unp.	H	Australia
ASTERISCIMUM	$x = 10$				
<i>glaucum</i>		20	Covas & S. 1946	—	Andes
TRACHYMENE (DIDISCUS)	$x = 11$				
<i>coerulea</i>	Blue Lace Fl.	22	Wanscher 1933a	H	Australia
<i>pilosa</i>		44	„ „	—	„

TRIBE V: DAUCEAE

DAUCUS	$x = 8, 9, 10, 11$				
<i>pumilus</i>		16	Gardé & G. 1949	—	Medit.
<i>muricatus?</i>		16	Wanscher 1933a	—	„
<i>carota</i>	Carrot	{ 18	Heiser & W. '48,	VVit	S.W. Asia, <i>cult</i>
		18	Gardé & G. 1951		
<i>gingidium (gummifer)</i>		18	Lindenbein 1932	—	Eur., N. Afr.
<i>maritimus</i>		18	Gardé & G. 1949	—	W. Europe
<i>polygamus</i>		18	„ „ „	—	Spain, Sicily
<i>platycarpus</i>		18	Tamamschjan 1933	—	Eur., Temp. Asia
<i>maximus</i>		{ 18	Lindenbein 1932	—	Medit., S.W. Asia
		22	Wanscher 1932		
<i>grandiflorus</i>		20	„ 1933a	—	Algeria
<i>pulcherrimus</i>		20	„ „	—	Cauc., Pers.
<i>crinitus</i>		22	Gardé & G. 1949	—	Portugal
<i>muricatus</i>		22	„ „ 1951	—	Medit.

TRIBE VI: LASERPITIEAE

CUMINUM $x = 7$				
<i>cuminum</i> Cumin	14	Sharma & G. 1954	MSp	Medit.
SILER $x = 8, 9, 11$				
<i>divaricatum</i>	16	Suzuka & K. 1949	—	Siberia
<i>trilobum</i>	{ 18	Håkansson 1953	—	Eur., Asia M.,
	22	Wanscher 1932		Cauc.
LASERPITIUM $x = 11$				
<i>halleri</i>	22	Favarger 1953	—	Alps
<i>latifolium</i>	22	Håkansson 1953	—	Europe
<i>prutenicum</i>	22	Gardé & G. 1949	—	„
MARGOTIA $x = 11$				
<i>gummifera</i>	22	Gardé & G. 1949	—	Spain
THAPSIA $x = 11$				
<i>decipiens</i>	22	Wanscher 1933a	—	W. Medit.
<i>garganica</i>	22	Gardé & G. 1949	—	Medit.

TRIBE VII: SMYRNIEAE

NOTHOSMYRNIUM $x = 9$				
<i>japonicum</i>	18	Suzuka & K. 1949	—	Japan
CONIUM $x = 11$				
<i>maculatum</i> Hemlock	22	Gardé & G. 1949	M	Eur., S.W. Asia
HIPPOMARATHRUM $x = 11$				
<i>pterochloenum</i>	22	Gardé & G. 1949	—	Medit.
SMYRNIUM $x = 11$				
<i>perfoliatum</i>	22	Wanscher 1932	M	S. Eur., Cauc.
<i>olusatrum</i> Alexanders	22	Rutland 1941	V	Eur., Med.

TRIBE VIII: CORIANDREAE

BIFORA $x = 11$				
<i>radians</i>	22	Wanscher 1933a	—	S. Eur., Asia M.
CORIANDRUM $x = 11$				
<i>sativum</i> Coriander	22	Gardé & G. 1949	Sp	S. Eur., S.W. Asia

TRIBE IX: PEUCEDANEAE

ANGELICA $x = 11$				
<i>archangelica</i> Angelica	22	Gardé & G. 1949	M	Eur., Sib., Himal.
<i>glabra</i>	22	Suzuka 1950	—	Japan
<i>pachycarpa</i>	22	Vaarama 1947a	—	Spain
<i>ursina</i>	22	„ „	—	Kamchatka
<i>pubescens</i>	22	Ogawa 1929	—	Japan
<i>sylvestris</i>	22	„ „	—	Eur., N. & S.W. Asia
sp.	66	„ „	—	—

FERULA $x = 11$					
<i>assafoetida</i>	Asafoetida	22	Håkansson 1953	MSp	Pers., Afghan.
<i>communis</i>		22	Gardé & G. 1949	—	Medit.
<i>glauca</i>		22	" "	—	S. Europe
<i>longifolia</i>		22	" "	—	Russia
HERACLEUM $x = 11$					
<i>sphondylium</i>	Cow Parsnip	22	Maude 1939	—	Temp. O.W.
LEVISTICUM $x = 11$					
<i>officinalis</i>	Lovage	22	Melderis 1930	H	S. Europe
LOPHOSCIADIUM $x = 11$					
<i>meifolium</i>		22	Håkansson 1953	H	S. Europe
OPOPANAX $x = 11$					
<i>chironium</i>		22	Gardé & G. 1949	P	Medit.
PASTINACA $x = 11$					
<i>sativa</i>	Parsnip	22	Ogawa 1929	R	Eur., N. Amer.
<i>urens</i>		22	Vazart 1950	—	France
TORDYLIUM $x = 10, 11$					
<i>cordatum</i>		20	Gardé & G. 1954	—	Cyprus, Mesop.
<i>syriacum</i>		20	" "	—	Syria, Asia M.
<i>maximum</i>		22	Tamamschjan 1933	—	S. Eur., S.W. Asia
PEUCEDANUM $x = 6, 11$					
<i>angustifolium</i>		12	Gardé & G. 1954	—	Italy
<i>decursivum</i>		22	Ogawa 1929	M	Japan
<i>japonicum</i>		22	" "	—	"
<i>graveolens</i>	Dill	22	Schulz-Gaebel 1930	MSp	Medit.
<i>hispanicum</i>		22	Gardé & G. 1949	—	Spain
<i>oreoselinum</i>		22	Håkansson 1953	—	S. & C. Europe
<i>palustre</i>	Hog's Fennel	22	" "	M	Europe
<i>verticillare</i>		22	Gardé & G. 1949	—	S. Europe
<i>officinale</i>		c. 66	Reese 1952a	M	C. Eur., W. Asia
CAPNOPHYLLUM $x = 10$					
<i>peregrinum</i>		20	Gardé & G. 1954	—	Medit.

Group XIII

ERICALES

214-220

(H)S(T)



Daboecia cantabrica

214 CLETHRACEAE

CLETHRA $x=8$

<i>arborea</i>		16	Hagerup 1928	—	Madeira
<i>alnifolia</i>	Sweet Pepperbush	32	„ „	H	S: U.S.A.

215 ERICACEAE

CALLUNA $x=8$

<i>vulgaris</i>	Heather, Ling	16	Hagerup 1928	FoBDH	Eur., N. Amer.
-----------------	---------------	----	--------------	-------	----------------

BRUCKENTHALIA $x=9?$

<i>spiculifolia</i>	Spike Heath	36	Callan 1941	H	E. Eur., A. Minor
---------------------	-------------	----	-------------	---	-------------------

PERNETTYA $x=11$

<i>tasmanica</i>		22	Callan 1941	H	Tasmania
<i>buxifolia</i>		44	„ „	H	Mexico
<i>ciliata (ciliaris)</i>		44	„ „	H	„
<i>pentlandii</i>		44	„ „	H	Andes
<i>prostrata</i>		44	„ „	H	Magellan
<i>furens</i>		66	„ „	HM	Chile
<i>mucronata</i>		66	„ „	H	Magellan

GAULTHETTYA $x=11$

<i>wisleyensis</i>		77	Callan 1941	H	<i>cult</i>
<i>(G. shallon × P. mucronata)</i>					

GAULTHERIA $x=11, 12, 13$

<i>antipoda</i>		22	Callan 1941	H	Tasm., New Zeal.
<i>cuneata</i>		22	„ „	H	W. China
<i>glomerata</i>		22	„ „	H	S. America
<i>hispida</i>	Snowberry	22	„ „	H	Austr., N.Z.
<i>cumingiana</i>		44	„ „	H	Philip. Is.
<i>griffithiana</i>		44	„ „	H	Himalaya
<i>shallon</i>	Salal	88	„ „	HF	W: N. Amer.
<i>procumbens</i>	Checkerberry	24	Newcomer 1941	FH	N. America
<i>itoana</i>		26	Callan 1941	H	Japan

KALMIA $x=11, 12$

<i>latifolia</i>	Calico Bush	24	Hagerup 1928	H	E: N. Amer.
<i>glauca</i>		48	„ „	H	W: N. Amer.
<i>polifolia</i>	Bog K.	44	Callan 1941	H	„

DABOECIA $x=12$

<i>cantabrica</i>	Irish Heath	24	Maude 1940	H	W. Europe
-------------------	-------------	----	------------	---	-----------

ERICA $x=12$

<i>arborea</i>	Tree Heath	24	Hagerup 1928	W	Medit., Cauc.
<i>carnea</i>		24	„ „	H	C. & S. Eur.
<i>cinerea</i>		24	„ „	H	W. Europe
<i>curvirostris</i>		24	Callan 1941	—	S. Africa
<i>hiemalis</i>		24	Hagerup 1928	—	<i>cult</i>
<i>sessilifolia (spicata)</i>		24	Callan 1941	—	S. Africa
<i>tetralix</i>		24	Hagerup 1928	H	N. & W. Europe
<i>vagans</i>	Cornish H.	24	Maude 1939	H	W. Europe
<i>wilmoreana</i>		24	Callan 1941	H	<i>cult</i>

LEIOPHYLLUM $x = 12$					
<i>buxifolium</i> Sand Myrtle	24	Hagerup 1928	H	S.E.: U.S.A.	
LEUCOTHOË $x = 12$					
<i>populifolia</i> (acuminata)	24	Callan 1941	H	S.E.: U.S.A.	
LOISELEURIA $x = 12$					
<i>procumbens</i> Apline Azalea	24	Hagerup 1928	H	North Reg.	
LYONIA (PIERIS) $x = 12$					
<i>lucida</i> Fetterbush	24	Callan 1941	H	S.E.: U.S.A.	
<i>mariana</i> Staggerbush	24	„ „	H	E: U.S.A.	
OXYDENDRON $x = 12$					
<i>arboreum</i> Sourwood	24	Baldwin 1942a	W	E: U.S.A.	
PIERIS $x = 12$					
<i>japonica</i>	24	Callan 1941	H	Japan	
PHYLLODOCE $x = 12$					
<i>coerulea</i>	24	Wanscher 1933b	H	North Reg.	
ANDROMEDA $x = 12$					
<i>polifolia</i> Bog Rosemary	48	Callan 1941	H	North Reg.	
ENKIANTHUS $x = 12$					
<i>campanulatus</i>	60	Hagerup 1941a	H	Japan	
ARBUTUS $x = 13$					
<i>andrachne</i>	26	Hagerup 1928	FHW	E. Medit.	
<i>canariensis</i>	26	„ „	FH	Canary Is.	
<i>andrachnoides</i>	26	Callan 1941	H	<i>cult</i>	
<i>xalapensis</i>	26	„ „	H	Mexico	
<i>unedo</i> Strawberry Tree	26	Sealy & W. 1950	FH	Medit.	
ARCTOUS (ARCTOSTAPHYLOS) $x = 13$					
<i>alpina</i> Black Bearberry	26	L. & L. 1948	—	North Reg.	
CASSIOPE $x = 13$					
<i>tetragona</i>	26	L. & L. 1948	H	Circumpolar	
<i>hypnoides</i>	c. 48	Hagerup 1928	H	Arctic	
CHIMAPHILA * $x = 13$					
<i>umbellata</i> & 1 sp.	c. 26	Hagerup 1941a	H	Eurasia	
MONESES (PYROLA) $x = 13$					
<i>uniflora</i> Shinleaf	26	Hagerup 1941a	H	North Reg.	
ARCTOSTAPHYLOS $x = 13$					
<i>bicolor</i>	26	Callan 1941	H	Calif.	
<i>pungens</i>	26	„ „	H	Calif., Mex.	
<i>uva-ursi</i>	52	Hagerup 1928	HM	North Temp.	
LEDUM $x = 13$					
<i>latifolium</i> Labrador Tea	26	Hagerup 1928	BHM	Arctic	
<i>columbianum</i>	26	Callan 1941	H	N. America	
<i>palustre</i> Crystal Tea	52	Hagerup 1941a	H	N. Eur., N. Asia	

RHODODENDRON * $x = 13$ (374 species counted)

S. 1. GLABRATAE (AZALEA)

Series Azalea

39 species	26	Janaki-Ammal <i>et al.</i>	H	North Temp.
		'50		
<i>calendulaceum</i>	52	" "	H	N.E: N. Amer.
<i>canadense</i>	52	" "	H	" "
3 Series: 2 spp.	26	" "	H	Colo., E. Asia

S. 2. NON-LEPIDOTAE

Series Fortunei

15 species	26	" "	H	S.W. China
<i>diaprepes</i>	26, 39	" "	H	S.W. Yunnan, Bur.
14 Series: 134 spp.	26	" "	H	S.E. Asia etc.

S. 3. LEPIDOTAE

Series Glaucum

9 species	26	" "	H	Sikkim, S.E. Tib.,
<i>pemakoense</i>	26, 52	" "	H	N. Bur., Yunnan
<i>tsangpoense</i>	52	" "	H	

Series Lepidotum

3 species	26	" "	H	Himal., S. Tibet
<i>baileyi</i>	52	" "	H	
<i>patulum</i>	52	" "	H	

Series Saluenense

7 species	26	Janaki-Ammal <i>et al.</i>	H	N.E. Bur., S.E. Tibet, Yunnan
		1950		
<i>cosmetum</i>	26, 52	" "	H	
<i>riparium</i>	26, 52	" "	H	
<i>saluenense</i>	26, 52	" "	H	
<i>prostratum</i>	52	" "	H	

Series Lapponicum

17 species	26	" "	H	Yunnan, Szechuan
<i>fastigiatum</i>	26, 52	" "	H	
<i>intricatum</i>	26, 52	" "	H	
<i>lapponicum</i>	26, 52	" "	H	(Lapland)
<i>lysolepis</i>	26, 52	" "	H	
<i>rupicola</i>	26, 52	" "	H	
<i>idoneum</i>	26, 52	" "	H	
<i>flavidum</i>	26, 52	" "	H	
<i>russatum</i>	39, 52	" "	H	
<i>capitatum</i>	52	" "	H	
<i>dasypetalum</i>	52	" "	H	
<i>edgarianum</i>	52	" "	H	
<i>drumonium</i>	52	" "	H	
<i>ramosissimum</i>	52	" "	H	
<i>violaceum</i>	52	" "	H	
<i>yungingense</i>	52	" "	H	
<i>ravum</i>	52, 78	" "	H	
<i>complexum</i>	78	" "	H	
<i>cuneatum</i>	78	" "	H	
<i>tapetiforme</i>	78	" "	H	
Series Triflorum				Yunnan, Szechuan
8 species	26	" "	H	
<i>aechmophyllum</i>	52	" "	H	
<i>ambiguum</i>	52	" "	H	

RHODODENDRON (cont.)

<i>amesiae</i>	52	Janaki-Ammal <i>et al.</i>	H	
	1950			
<i>augustinii</i>	52	" "	H	
<i>chiaranthum</i>	52	" "	H	
<i>chasmanthum</i>	52	" "	H	
<i>concinnum</i>	52	" "	H	
<i>exquisitum</i>	52	" "	H	
<i>pseudovanthinum</i>	52	" "	H	
<i>searsiae</i>	52	" "	H	
<i>zaleucum</i>	52	" "	H	
<i>artosquamatum</i>	78	" "	H	
<i>davidsonianum</i>	78	" "	H	
<i>oreotrephis</i>	78	" "	H	
<i>siderophyllum</i>	78	" "	H	
<i>timeteum</i>	78	" "	H	
<i>xanthocodon</i>	78	" "	H	
<i>yunnanense</i>	78	" "	H	
Series Maddenii				Sikkim—W. Yun-
23 species	26	" "	H	nan & Burma
<i>crassum</i>	52, 78	" "	H	
<i>maddenii</i>	52, 78	" "	H	
<i>polyandrum</i>	78	" "	H	
<i>manipurensis</i>	78, 156	" "	H	
Series Heliolepis				N. Bur.—Kansu
<i>aparinum</i>	52	Janaki-Ammal <i>et al.</i>	H	
	1950			
<i>brevistylum</i>	52	" "	H	
<i>desquamatum</i>	52	" "	H	
<i>rubiginosum</i>	52, 78	" "	H	
<i>heliolepis</i>	78	" "	H	
<i>pholidotum</i>	104	" "	H	
Series Cinnabarinum				Sikkim, Bhutan
<i>cinnabarinum</i>	78	" "	H	
<i>concatenans</i>	78	" "	H	
<i>keysii</i>	78	" "	H	
15 series: 47 spp.	26	" "	H	<div> 1 S.E. U.S.A. 1 N.E. Asia 44 Himalaya 1 Eur. Alps </div>
RAMISCHIA (PYROLA) $x = 19$				
<i>secunda</i>	38	Hagerup 1941a	—	N. Europe
PYROLA (PIROLA) $x_2 = 23$ (11 + 12)				
<i>grandiflora</i>	46	Hagerup 1928	—	North Temp.
<i>minor</i>	Common Winter-46	" "	H	"
	green			
<i>rotundifolia</i>	46	" "	H	Eur., N. Amer.
<i>virens (chlorantha)</i>	46	" 1941a	H	N. America
<i>media</i>	92	" "	H	Europe

216 VACCINIACEAE

GAYLUSSACIA $x = 12$

<i>baccata</i>	Huckleberry	24	Newcomer 1941	F	N. America
<i>(resinosa)</i>					

PENTAPTERYGIUM $x = 12$					
<i>serpens</i>		24	Callan 1941	H	Himalayas
POLYCODIUM $x = 12$					
<i>stamineum</i>	Deerberry	24	Longley 1927b	F	N: U.S.A.
OXYCOCCUS (VACCINIUM) $x = 12$					
<i>macrocarpus</i>	Cranberry	24	Darrow <i>et al.</i> 1944	F	E: N. America
<i>microcarpus</i>		24	" "	F	North Reg.
<i>quadripetalus</i>	Cranberry	48	" "	F	"
(<i>palustris</i>)					
as <i>ovalifolius</i>		48	" "	F	"
<i>gigas</i>		72	Hagerup 1940	—	N.W. Europe
VACCINIUM $x = 12$					
<i>atroccoccum</i>		24	Darrow <i>et al.</i> 1944	FH	E: U.S.A.
<i>angustifolium</i>	Sugarberry	24	" "	F	N.E.: N. Amer.
<i>caesariense</i>		24	" "	F	E: U.S.A.
<i>darrowi</i>		24	" "	F	S.E: U.S.A.
<i>elliottii</i>	Mayberry	24	" "	F	"
<i>crassifolium</i>	Creeping Blueberry	24	" "	F	"
<i>myrtilloides</i>	Canda. Bl.	24	" "	F	N. America
<i>myrtilus</i>	Whortleberry	24	Rutland 1941	F	North Temp.
<i>ovatum</i>	Calif. Bl.	24	Darrow <i>et al.</i> 1944	F	W: N. America
<i>parvifolium</i>		24	" "	F	N.E: N. Amer.
<i>pallidum</i>		24	" "	F	E: U.S.A.
<i>tenellum</i>		24	" "	F	S.E: U.S.A.
<i>vacillans</i>		24	" "	F	U.S.A.
<i>vitis-idaea</i>	Red Whortleberry	24	Newcomer 1941	F	Arctic, Subarctic
<i>uliginosum</i>	Moorberry, Bog Bilberry	24, 48	Hagerup 1933	F	North Temp.
<i>australe</i>		48	Darrow <i>et al.</i> 1944	F	E: U.S.A.
<i>arctostaphylos</i>	Broussa T.	48	" "	B	Caucasus
<i>brittonii</i>		48	" "	F	N.E.: N. Amer.
<i>corymbosum</i>	Highbush Bl.	48	" "	F	E: N. America
<i>hirsutum</i>	Hairy Bl.	48	" "	F	E: U.S.A.
<i>lamarckii</i>		48	" "	F	"
<i>myrsinities</i>	Myrtle Bl.	48	" "	FH	S.E: U.S.A.
<i>simulatum</i>		48	" "	F	E: U.S.A.
<i>tallapusae (alto-montanum)</i>		48	" "	F	E: N. America
<i>virgatum</i>		48	" "	F	E: U.S.A.
<i>amoenum</i>		72	" "	F	"
<i>ashei</i>	Rabbiteye Bl.	72	" "	F	"
<i>constablaei</i>		72	" "	F	S: U.S.A.

217 EPACRIDACEAE

TRIBE I: STYPHELIEAE

STYPHELIA * $x = 4$					
<i>longiflora</i>	& 4 spp.	8	Smith-White 1948b	H	E. Australia
<i>tenuiflora</i>		8	" unsp.	—	W. "

LEUCOPOGON * $x=4, 6, 11$

(i) <i>fraseri</i>	& 11 spp.	8	Smith-White '48b & unp. (1955)	H	Aust., N.Z.
<i>juniperinus</i>	(3x)	12	" "	H	E. Australia
<i>biflorus</i>		16	" unp.	—	"
<i>ericoides</i>	& 5 spp.	12	" '48b & unp.	H	Australia
(ii) <i>richei</i>	& 2 spp.	12	" "	H	W. Australia
<i>amplexicaulis</i>		24	" "	H	N.S.W.
<i>australis</i>		24	" unp.	H	W. Australia
<i>lanceolatus</i>		48	" '48b	H	E. "
<i>revolutus</i>	22 + 0 - 3B		" unp.	—	W. "
<i>glabellus</i>	& 3 spp.	22	" unp.	—	W. "
<i>oldfieldii</i>	22 + 0 - 2B, c. 66		" "	—	" "
<i> cuculatus</i>	c. 44		" "	—	" "

ASTROLOMA * $x=4, 7$

<i>ciliatum</i>	& 8 spp.	8	Smith-White unp.	—	W. Australia
<i>microdonta</i>		16	" "	—	" "
<i>humifusum</i>		24	" '48b	H	Aust., Tasm.
<i>stomarrhena</i>		32	" unp.	—	W. Australia
<i>conostephioides</i>		14	" "	—	S. "
<i>pinifolium</i>		14	" '48b	H	E. "

LISSANTHE $x=7$

<i>sapida</i>		14	Smith-White '48b	H	E. Australia
<i>strigosa</i>		14	" "	H	"
<i>montana</i>	28, 42		" unp.	—	"

BRACHYLOMA $x=7, 9$

<i>preissii</i>	14 + 0 - 1B	14	Smith-White unp.	—	W. Australia
<i>daphnoides</i>		18	" '48b	H	E. "
<i>scortechinii</i>		18	" unp.	—	" "

MELICHRUS $x=8$

<i>rotatus</i>		16	Smith-White '48b	H	E. Australia
<i>urceolatus</i>		16	" "	H	" "

ACROTRICHE $x=9$

<i>divaricata</i>		18	Smith-White '48b	H	E. Australia
<i>fasciculiflora</i>		18	" unp.	—	S. "
<i>ovalifolia</i>		18	" "	H	W. "
<i>serrulata</i>		18	" '48b	—	E. "

TROCHOCARPA $x=10$

<i>laurina</i>		20	Smith-White '48b	—	E. Australia
----------------	--	----	------------------	---	--------------

MONOTOCA $x=12$

<i>elliptica</i>		24	Smith-White '48b	H	E. Australia
<i>scoparia</i>		24	" "	H	"

TRIBE II: EPACRIDEAE

SPHENOTOMA $x=6, 7$

<i>dracophylloides</i>		12	Smith-White unp.	—	W. Australia
<i>drummondii</i>		14	" "	—	"

SPRENGELIA $x = 6$				
<i>incarnata</i>	24	Smith-White '48b	H	E. Aust., Tasm.
ANDERSONIA $x_2 = 13$ (6 + 7)				
<i>coerulea</i>	26	Smith-White unp.	H	W. Australia
<i>sprengelioides</i>	26	„ „	H	„
COSMELIA $x_2 = 13$				
<i>rubra</i>	26	Smith-White unp.	H	W. Australia
DRACOPHYLLUM $x_2 = 13$				
<i>secundum</i>	26	Smith-White '48b	H	E. Australia
LYSINEMA $x = 6$				
<i>ciliatum</i>	24	Smith-White unp.	H	W. Australia
<i>conspicuum</i>	24	„ „	H	„
RICHEA * $x_2 = 13$				
<i>gunnii</i>	26	Smith-White unp.	—	E. Australia
<i>scoparia</i> & 3 spp.	26	„ „	H	Tasmania
WOOLLSIA $x_2 = 13$				
<i>pungens</i>	26	Smith-White '48b	H	E. Australia
EPACRIS * $x_2 = 13$				
<i>longiflora</i> & 8 spp.	26	Smith-White '48b & unp.	H	E. Australia
<i>serpyllifolia</i>	26, 52	„ unp.	H	N.S.W., Tasm.

218 MONOTROPACEAE

MONOTROPA $x = 8$				
<i>hypophegea</i>	16	L. & L. 1944b	—	North Temp.
<i>hypopithys</i> Y. Bird's Nest	48	„	—	„

219 DIAPENSIACEAE

DIAPENSIA $x = 6$				
<i>lapponica</i>	12	Hagerup 1928	H	North Temp.
<i>as obovata</i>	12	Sugiura 1937b		
PYXIDANTHERA $x = 6$				
<i>barbulata</i>	12	Baldwin 1939	H	E: N. America
SHORTIA $x = 6$				
<i>galacifolia</i>	12	Baldwin 1939	H	S.E: U.S.A.
SCHIZOCODON $x = 6$				
<i>soldanelloides</i>	12	Baldwin 1939	H	Japan
GALAX $x = 6$				
<i>aphylla</i>	12, 24	Baldwin 1941a	H	E: N. America

Group XIV

EBENALES

221, 222

ST

STYRACALES

224-227

ST

MYRSINALES

223

ST

LOGANIALES

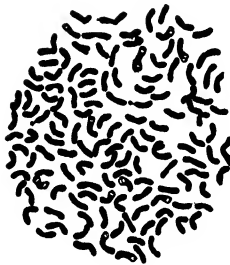
228, 229

ST

APOCYNALES

230, 231

HST



Fraxinus chinensis

221 EBENACEAE

DIOSPYROS	$x = 15$				
<i>discolor</i>	Velvet Apple	30	Namikawa & H. 1928	F	Philippines
<i>embryopteris</i>	Gaub	30	Pathak <i>et al.</i> 1949	F	India, Malaya
<i>lotus</i>	Date Plum, Lotus	30	Namikawa & H. 1928	F	Temp. Asia
<i>texana</i>	Black Pers.	30	Baldwin & C. 1941		Mexico
<i>virginiana</i>	Persimmon	60, 90	" "	F	N. America
<i>kaki</i>	Japanese Pers.	90	Namikawa & H. 1928	F	Ind.—Japan

222 SAPOTACEAE

BUMELIA	$x = 12$				
<i>lanuginosa</i>	Chittamwood	24	Brown & C. 1940	H	S.E: U.S.A.
MADHUCA (BASSIA)	$x = 12$				
<i>latifolia</i>	Mahwah	24	Singh 1951	AOW	India
PALAEQUIM	$x = 12$				
<i>gutta</i>	Gutta-percha	24	EKJ*	Ru	India, Malaya
CHRYSOPHYLLUM	$x = 12, 13$				
<i>cainito</i>	Star Apple	24	Krishnaswamy & R. 1949	F	W. Ind., Trop. Amer.
<i>oliviforme</i>	Satin Leaf	26	Tjio 1948		
		52	" "	H	Fla., Trop. Amer.
ACHRAS	$x = 13$				
<i>zapota</i>	Sapodilla	26	EKJ*	RuFW	W. Indies, C. Amer.

223 MYRSINACEAE

ARDISIA (ICACOREA)	$x = 12, 13$				
<i>crispa (crenata)</i>		24	La Cour 1945*	H	China, Malaya
		46	Sugiura 1936b		

224 STYRACACEAE

STYRAX	$x = 8$				
<i>obassia</i>	Fragrant Styrax	16	Manshard 1936	HM	Japan
<i>japonica</i>		40	" "	M	"
HALESIA	$x = 12$				
<i>diptera</i>		24	Simonet & M. 1932	—	S.E: U.S.A.
<i>carolina</i>	Wild Olive,	24	Manshard 1936	FH	"
<i>(tetraptera)</i>	Snowdrop T.				
PTEROSTYRAX	$x = 12$				
<i>corymbosa</i>		24	Manshard 1936	HM	Japan

228 LOGANIACEAE

FAGRAEA	$x = 6$				
<i>fragrans</i>		12	Mohrbutter 1936	—	Burma, Malaya
<i>litoralis</i>		12	" "	—	Java

DESFONTAINIA $x = 7$				
<i>spinosa</i>	14	Moore 1947	H	Chile, Peru
GELSEMIUM $x = 8$				
<i>sempervirens</i> False Jasmine	16	Moore 1947	HM	S.E: N. Amer.
POLYPREMUM $x = 11$				
<i>procumbens</i>	22	Moore 1947	—	S.E: N. Amer.
STRYCHNOS $x = 12$				
<i>laurina</i>	24	Mohrbutter 1936	M	E. Ind., Malaya
<i>nux-vomica</i> Nux-vomica	24	EKJ*	M	India, Burma
<i>sansibariensis</i> Zanz. Poison Nut	24	Mohrbutter 1936	M	Trop. Africa
SPIGELIA $x = (12) 24$				
<i>marilandica</i> Indian Pink Root	48	Moore 1947	H	S.E: N. Amer.
CHILIANTHUS $x_2 = 19 (7 + 12)$				
<i>oleaceus</i>	38	Moore 1947	H	S. Africa
NICODEMIA $x_2 = 19 (7 + 12)$				
<i>madagascariensis</i>	38	Moore 1947	—	Mascarene Is.
BUDDLEIA $x_2 = 19 (7 + 12)$				
<i>alternifolia</i>	38	Moore 1947	H	Kansu
<i>asiatica</i>	38	"	H	Trop. Asia, Mal.
<i>brasiliensis</i>	38	"	H	Brazil
<i>globosa</i> Panil	38	"	H	Chile, Peru
<i>japonica</i>	38	"	H	Japan
<i>lindleyana</i>	38	"	H	China
<i>salviifolia</i>	38	"	H	S. Africa
<i>scordioides</i>	38	"	—	Texas, Mexico
<i>tibetica</i> v. <i>farreri</i>	38	"	H	Kansu
<i>americana</i>	76	"	—	Mexico, C. Amer.
<i>davidii</i> Summer Lilac	76	"	H	C. China, Tibet
(17 garden forms)	76	"	H	<i>cult</i>
<i>fallowiana</i>	76	"	H	Yunnan
<i>albiflora</i>	c. 114	"	H	Hupei, Shensi
<i>forrestii</i>	c. 114	"	H	Yunnan
<i>limitanea</i>	c. 114	"	—	China, Burma
<i>nivea</i>	c. 114	"	H	Szechuan
<i>stenostachya</i>	c. 114	"	H	"
<i>colvillei</i>	c. 300	"	H	Himalayas

229 OLEACEAE

MENODORA $x = 11$				
<i>longiflora</i>	22	Taylor 1945	—	Texas
<i>scoparia</i>	22	Bowden 1945b	—	W: N. Amer.
<i>scabra</i>	44	Taylor 1945	—	New Mexico
JASMINUM $x = (12), 13$				
<i>mesnyi</i>	{ 24 26	{ Bowden 1945b Taylor 1945	H	China

JASMINUM (cont.)

<i>affine</i>	26	Bowden 1940a	P	Malaya
<i>auriculatum</i>	26	Krishnaswamy & R. 1948a	P	India, Ceylon
<i>beesianum</i>	26	Bowden 1945b	H	W. China
<i>calophyllum</i>	26	Krishnaswamy & R. 1949	P	India
<i>flexile</i>	26, 52	Raman 1955	P	"
<i>floridum</i>	26	Bowden 1940a	—	China
<i>fruticans</i>	26	Sax & A. 1932	—	Med., S.W. Asia
<i>gracillimum</i>	26	Taylor 1945	H	N. Borneo
<i>humile</i> Italian Jasmine	26	Bowden 1940a	P	Afghan., Persia
<i>malabaricum</i>	26	Krishnaswamy & R. 1949	—	India
<i>odoratissimum</i>	26	Bowden 1945b	H	Madeira
<i>officinale</i> White J. (grandiflorum)	26	Krishnaswamy & R. 1948a	HP	Persia—China
<i>parkeri</i>	26	Bowden 1945b	H	Himalayas
<i>pubigerum</i>	26	Taylor 1945	H	"
<i>rigidum</i>	26	Krishnaswamy & R. 1949	H	India
<i>simplicifolium</i> (lucidum)	26	Taylor 1945	—	Aust., Pacific
<i>tortuosum</i>	26	" "	—	S. Africa
<i>wallichianum</i>	26	Bowden 1940a	P	Nepal
<i>multiflorum</i> (pubescens)	26, 39	Dutt 1952b	H	India, China
<i>nitidum</i>	26, 39	Taylor 1945	H	S. Pacific
<i>sambac</i> Mohle, Arabian J.	26, 39	Bowden 1945b		
	26, 39	Krishnaswamy & R. '48a	HP	Trop. Asia
<i>primulinum</i> (3x)	39	Tjio '48, Taylor '45		
	39	Krishnaswamy & R. '48a	H	China, cult
<i>angustifolium</i>	52	" "	'49	India
<i>dichotomum</i> Gold Coast J.	52	Taylor 1945	—	Trop. W. Africa
<i>nudiflorum</i> Winter J.	52	Bowden 1940a	HP	China
<i>calophyllum</i> as <i>calcyphytum</i> ?	52	Dutt 1952b		

FONTANESIA x = 13

<i>fortunel</i>	26	Taylor 1945	H	China
<i>phillyraeoides</i>	26	"	H	Sicily, A. Minor, Syria

ABELIOPHYLLUM x = 14

<i>distichum</i>	28	Taylor 1945	H	Korea
------------------	----	-------------	---	-------

FORSYTHIA x = 14

<i>europaea</i>	28	Sax & A. 1932	H	Albania
<i>ovata</i>	28	" "	H	Korea
<i>suspensa</i>	28	" "	H	China
<i>viridissima</i>	28	" "	H	"

CHIONANTHUS x = 23

<i>virginicus</i> Fringe Tree	46	Sax & A. 1932	H	E: U.S.A.
-------------------------------	----	---------------	---	-----------

FORESTIERA x = 23

<i>acuminata</i>	46	Sax & A. 1932	H	Texas
<i>neo-mexicana</i>	46	Taylor 1945	H	S.W: U.S.A.

FRAXINUS x = 23

<i>angustifolia</i>		46	Taylor 1945	H	S. Eur., N. Afr.
<i>berlandiana</i>		46	" "	H	Texas, Mex.
<i>biltmoreana</i>		46	" "	H	E: U.S.A.
<i>bungeana</i>		46	" "	H	N. China
<i>excelsior</i>	European Ash	46	Sax & A. 1932	VW	Eur., Asia Minor
<i>floribunda</i>	Himalaya A.	46	Bowden 1940a	W	Himalayas
<i>griffithii</i>		46	Taylor 1945	—	China, Philip., Malaya
<i>holotricha</i>		46	" "	H	E. Balkans
<i>oregona</i>	Oregon Ash	46	Sax & A. 1932	W	N.W: U.S.A.
<i>ornus</i>	Manna Ash	46	Taylor 1945	HM	Medit., A. Minor
<i>pennsylvanica</i>	Red Ash	46	Sax & A. 1932	W	E: N. America
<i>sogdiana</i>		46	Taylor 1945	H	Turkestan
<i>xanthoxyloides</i>		46	" "	H	Himal., Afghan
<i>velutina</i>		46, 92	" "	H	S.W: U.S.A.
<i>americana</i>	White Ash	46, 92, 138	Wright 1944	HW	E: N. America
<i>chinensis</i>	Chinese Ash	138	Taylor 1945	Fo ₁ W	E. Asia

LIGUSTRUM x = 23

<i>acuminatum</i>		46	Taylor 1945	H	Japan
<i>acutissimum</i>		46	" "	—	C. China
<i>amurense</i>		46	Sax & A. 1932	H	N. China
<i>delavayanum</i>		46	Taylor 1945	H	China
<i>ibota</i>		46	" "	H	China, Japan
<i>insulare</i>		46	" "	H	(unknown)
<i>japonicum</i>		46	" "	H	Japan, Korea
<i>lucidum</i>	Glossy Privet	46	" "	Fo ₁ H	China—Japan
<i>obtusifolium</i>		46	" "	H	Japan
<i>quihoui</i>		46	" "	H	China
<i>vulgare</i>	Common Privet	46	" "	H	Eur., N. Africa
<i>yezoense</i>		46	M. & S. 1935	H	Japan

OLEA x = 23

<i>europaea</i>	Olive	46	Breviglieri & B. 1955	FOW	Med., S.W: Asia
<i>laurifolia</i>	Bl. Ironwood	c. 48	Andersson 1931	W	S. Africa

OSMANTHUS x = 23

<i>armatus</i>		46	Taylor 1945	H	China
<i>fragens</i>		46	" "	H	Himal.—Japan
<i>ilicifolius</i>		46	" "	H	Japan
<i>americanus</i>	Devil Wood	138	" "	H	S.W: U.S.A.

OSMAREA x = 23

<i>burkwoodii</i>	(<i>Siphonosmanthus</i>)	46	Taylor 1945	H	<i>cult</i>
<i>delayavi</i>	× <i>Phillyrea decora</i>				

PHILLYREA x = 23

<i>decora</i>		46	Taylor 1945	H	W. Asia
---------------	--	----	-------------	---	---------

SYRINGA x = 22, 23, 24

<i>emodi</i>	Himalayan Lilac	44	Tischler 1930	H	Himalayas
<i>persica</i>	Persian L.	44	Sax & A. 1932	H	Pers.—N.W: Ch.
<i>amurensis</i>	Amur L.	46	" "	H	W. China, Manch.
<i>oblata</i>		46	Taylor 1945	H	N. China
<i>potanini</i>		46	" "	H	W. China

SYRINGA (cont.)

<i>reflexa</i>		46	Taylor 1945	H	C. China
<i>sweginzowii</i>		46	" "	H	N.W. China
<i>velutina</i>	Manchurian L.	46	Sax & A. 1932	H	N. China, Korea
<i>wolffi</i>		46	Sax 1930b	H	Manch., Korea
<i>josikaea</i>	Hungarian L.	46-48	Sax & A. 1932	H	Hungary, Galicia
<i>komarovii</i>		46-48	" "	H	W. China
<i>meyeri</i>		46-48	" "	H	N. China
<i>tomentella</i>		46-48	" "	H	W. China
<i>villosa</i>	Late L.	46-48	" "	H	China
<i>vulgaris</i>	Common L.	46, 47, 48	Taylor 1945	HP	S.E.: Eur., <i>cult</i>
<i>microphylla</i>		48	" "	H	N. China
<i>pinnatifolia</i>	Pinnate L.	48	Sax & A. 1932	H	W. China
<i>pubescens</i>	Hairy L.	48	" "	H	N. China
<i>yunnanensis</i>		48	Sax 1930b	H	W. China

230 APOCYNACEAE

LOCHNERA $x=8$

<i>rosea</i>	16	Sugiura 1936b	M	Tropics
--------------	----	---------------	---	---------

ALLAMANDA $x=9$

<i>cathartica</i> v. <i>grandiflora</i>	18	Pathak <i>et al.</i> 1949	H	Guiana
<i>williamsii</i>	18	Sugiura 1936a	H	<i>cult</i>

THEVETIA $x=9, 10$

<i>peruviana</i> Yellow	{	18	Pathak <i>et al.</i> 1949	HM	Trop. Amer.
(<i>nereifolia</i>) Oleander		20	Hardas & J. 1954		

PLUMERIA $x=(9), 18$

<i>alba</i> White Fr.	36	Singh 1951	H	W. Indies
<i>rubra</i> Frangipani	36	" "	H	Mex.—Ecuador
v. <i>acutifolia</i> Pagoda T.	36	" "	HM	Mexico

STROPHANTHUS* $x=10$

arnoldianus		20	Witkus 1951	H	Congo
grandiflorus		20	" "	H	Trop. S. Africa
gratus		20	" "	H	W. Africa
hispidus		{	" "	HM	"
			20		
kombe		20	Witkus 1951	M	"
preussii		20	" "	H	"
sarmentosus		{	" "	H	"
			18		
speciosus	& 9 spp.	20	Witkus 1951	H	Trop. S. Africa

TRACHELOSPERMUM $x=10$

<i>jasminoides</i> Star Jasmine	20	Sugiura 1936a	H	Japan
---------------------------------	----	---------------	---	-------

VALLARIS $x=10$

<i>heynei</i>	20	Rau 1941	H	Him.—Burma, Ceylon
---------------	----	----------	---	--------------------

CERBERA $x=10, 11$

<i>odallum</i>	40	Rau 1941	M	India
<i>tanghin</i> Tanghin Poison T.	44	EKJ*	M	Madagascar

APOCYNUM $x = 11$					
<i>androsaemifolium</i>	Dogbane	16?	Schürhoff <i>et al.</i> 1937	—	N. America
<i>cannabinum</i>	Indian Hemp	{ 16?	" " "	MT	"
		22	Breslawetz <i>et al.</i> 1934		
<i>venetum</i>		{ 16?	Schürhoff <i>et al.</i> 1937	T	Medit., Asia
		22	Medvedeva 1937		
CARISSA $x = 11$					
<i>carandas</i>	Karaunda	22	Singh 1951	DFHW	India
<i>edulis</i>		22	Tjio 1948	FH	Egypt
<i>spinarum</i>		22	Singh 1951	H	India, Ceylon
MASCARENHASIA $x = 11$					
<i>elastica</i>	Madagascar Rubber	22	EKJ*	Ru	Trop. Africa
NERIUM $x = 11$					
<i>odorum</i>	Scented O.	22	Tjio 1948	HM	Persia, Ind., Japan
<i>oleander</i>	Oleander	22	" "	H	Medit.
TABERNAEMONTANA (ERVATAMIA) $x = 11$					
<i>coronaria</i>	Grape Jasmine	22	Pathak <i>et al.</i> 1949	H	India
ODONTADENA $x = 12$					
<i>speciosa</i>		24	Andersson 1931	H	Brazil, Guiana
VINCA (CATHARANTHUS) $x = (8), 23$					
<i>rosea</i>		16, (32)	Furusato 1940	H	Tropics
<i>difformis</i>		46	Bowden 1945a	—	Spain
<i>herbacea</i>		46	Finn 1928	H	E. Eur., A. Minor
<i>minor</i>	Periwinkle	46	Rütland 1941	HM	Europe
<i>major</i>		92	" "	HM	Medit.

231 ASCLEPIADACEAE

ARAUIA $x = 10$					
<i>sericifera</i>		20	Schnack & C. 1947	H	S. Brazil
PHILIBERTIA $x = 10$					
<i>gilliesii</i>		20	Covas & S. 1946	—	S. America
ASCLEPIAS $x = 11$					
<i>curassavica</i>	Blood Flower	22	Moore 1946	HTM	Trop. Amer.
<i>incarnata</i>	Milk Weed	22	" "	HTRu	N. America
<i>latifolia</i>	Broad Leaf M.	22	Moyer 1936	—	"
<i>salicifolia</i>		22	" "	—	Mexico
<i>speciosa</i>		22	Moore 1946	H	W: N. America
<i>sullivantii</i>		22	" "	H	N. America
<i>syriaca</i>	Silk Weed	22	" "	RuV	"
<i>tuberosa</i>	Butterfly M.	22	" "	H	"
GOMPHOCARPUS $x = 11$					
<i>fruticosus</i>		22	Pardi 1934	—	Medit.
<i>physocarpus</i>		22	" "	—	S. Australia
HOYA $x = 11$					
<i>carnosa</i>	Wax Plant	22	Pardi 1934	HM	Tr. Austr. & Asia

STAPELIA * $x = 11$ Carrion Fl.					
<i>gigantea</i>	& 2 spp.	22	Pardi 1934	—	S. Africa
<i>variegata</i>	& 4 spp.	44	„ „	H	„
STEPHANOTIS $x = 11$					
<i>floribunda</i>		22	Pardi 1934	H	Madagascar
VINCETOXICUM (CYNANCHUM) $x = 11$					
<i>officinale</i>	Tame Poison	22	Pardi 1934	HM	Eur., Cauc.
<i>nigrum</i>		44	„ „	H	S. Eur., A. Minor
CEROPEGIA $x = 11$					
<i>debilis</i>		44	Pardi 1934	H	Trop. Africa
<i>woodii</i>		44	„ „	H	S. Africa
PERIPLOCA $x = 11, 12$					
<i>sepium</i>		22	Sax & H. 1936	H	China
<i>graeca</i>	Silk Vine	22	Bowden 1940a	H	S. Eur., S.W. Asia
		24	Pardi 1934		
		24	Lopane 1951		
CRYPTOSTEGIA $x = 12$					
<i>grandiflora</i>		24	Pardi 1934	H(Ru)	Madag., India
DAEMIA $x = 12$					
<i>extensa</i>		24	Nirula 1945	H	India, Mal., Tr. Africa

Group XV

RUBIALES

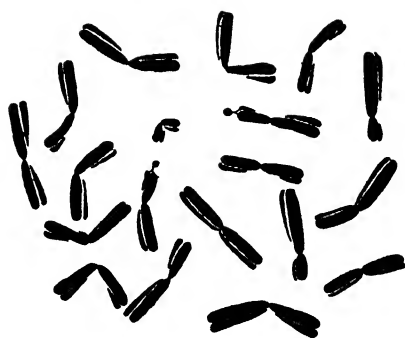
232, 233

HST

ASTERALES

234–238

HS(T)



Chrysanthemum millefoliatum

232 RUBIACEAE

OLDENLANDIA $x=9$

<i>crystallina</i>	18	Raghavan & R. '41	—	India, Malaya
<i>senegalensis</i>	18	Hagerup 1932	—	Trop. Africa
<i>alata</i>	36	Raghavan & R. '41	—	India
<i>aspera</i>	36	" "	—	India, Trop. Afr.
<i>capensis</i>	36	Hagerup 1932	—	Trop. & S. Afr.
<i>corymbosa</i> Parpata	36	Raghavan & R. '41	M	India
<i>umbellata</i> Chay	36	" "	D	Abyss., E. Indies
<i>paniculata</i>	72	" "		Tropics

VAILLANTIA $x=9$

<i>hispidia</i>	18	Fagerlind 1937	—	Medit.
<i>muralis</i>	18	" "	—	S. Europe

BOUVARDIA $x=9$

<i>corymbosa (humboldtii)</i>	36	Fagerlind 1937	H	<i>cult</i>
<i>hybrida</i>	36	" "	H	"
<i>coccinea</i>	c. 72	" "	H	Guiana
<i>leiantha</i>	c. 72	" "	H	Mexico

DENTELLA $x=(9), 18$

<i>repens</i>	36	Raghavan & R. '41	—	Tr. Asia & Austr.
---------------	----	-------------------	---	-------------------

HOUSTONIA $x=9$

<i>caerulea</i>	36	Fagerlind 1937	—	N. America
-----------------	----	----------------	---	------------

MANETTIA (LYGISTUM) $x=9?, 11$

<i>coccinea</i>	c. 36	Fagerlind 1937	H	Mex.—Colombia
<i>inflata</i>	c. 36	" "	H	Parag., Urug.
<i>bicolor</i>	22	Pouques 1949a	H	Brazil

PENTAS $x=10$

<i>carnea (lanceolata)</i>	20	Fagerlind 1937	H	Trop. Afr., Arab.
<i>coccinea</i>	20	" "	—	Trop. Africa
<i>oncostipula</i>	20	" "		"

ASPERULA (GALIUM) * $x=10, 11$

<i>molluginoides</i>	20	Fagerlind 1937	—	Caucasus
<i>arcadiensis</i>	22	" "	H	Greece
<i>taurina</i> Pink Woodruff	22	" "	—	S. Europe
6 species	22	" "		
<i>galioides (glauca)</i>	22, 44	" "	H	Eur., Cauc.
<i>cynanchica</i> Squinancywort	44	" "	H	Eur., Asia Minor
<i>hexaphylla</i>	44	" "	H	S. Europe
<i>odorata</i> Sweet Woodruff	44	" "	HMSp	Eur., S.W. Asia
<i>tinctoria</i> Dyer's W.	44	" "	D	Europe
5 species	44	" "		

PHUOPSIS (CRUCIANELLA) $x=10, 11$

<i>stylosa</i> Crosswort	{ 20	Fagerlind 1937	H	Caucasus
	{ 22	Homeyer 1935		

RONDELETIA $x=10, 11$

<i>amoena</i>	c. 40	Fagerlind 1937	H	Guatemala
<i>cordata</i>	c. 40	" "	H	"
<i>erythraea</i>	c. 40	" "	H	Trop. America

RONDELETIA (cont.)

<i>latifolia</i>	44	Fagerlind 1937	H	Guatemala
<i>odorata (speciosa)</i>	44	" "	H	Cuba

GALIUM* $x = 10, 11, 12$

<i>vaillantii</i>	20	Fagerlind 1937	—	N. Temp.
<i>spurium</i>	{ 20 44	" " Homeyer 1935	—	Eur., S.W. Asia
<i>cruciata</i> Crosswort & 14 spp.	22	Fagerlind 1934, 1937	M	Eur., N. Africa
<i>tricorne</i> & 11 spp.	44	" "	—	Medit.
<i>austriacum</i>	22, 44	Ehrendorfer 1949	—	Europe
<i>flavicans</i>	22, 44	Fagerlind 1937	—	Hungary
<i>corrudaefolium (lucidum)</i>	22, 44	" "	—	S. Europe
<i>setaceum</i>	22, 44	" 1934	—	Medit., Temp. As.
<i>uliginosum</i>	44	" 1937	—	Eur., N. Asia
<i>verum</i> Lady's Bedstraw	22, 44, (66)	" "	BM	North Temp.
<i>mollugo</i> White Bedstraw	22, 44, 55, 66	" "	H	Europe
<i>parisiense</i>	22, 44, 66	" "	—	Eur., S.W. Asia
<i>aparine</i> Cleavers	{ 22, 44 c. 66, c. 88	Pouques 1949a Fagerlind 1934	M	North Temp.
<i>anisophyllum</i>	44, 66	Ehrendorfer 1949	—	Europe
<i>boreale</i>	44	Löve & L. 1954	H	N. Eurasia
<i>septentrionale (boreale)</i>	66	" "	H	N: N. Amer., N. Asia
<i>pumilum</i>	{ 44 88	Fagerlind 1937 Ehrendorfer 1949	—	Europe
<i>aristatum (laevigatum)</i>	44, 66, 88	Fagerlind 1937	—	"
<i>helveticum</i> & 2 spp.	66	" "	—	"
<i>rubroides</i>	{ 66 c. 132	Homeyer 1935 Fagerlind 1934	—	Eur., N. Asia
<i>trifidum</i>	24	" 1937	—	North Temp.
<i>palustre</i>	24, 48, 96	Hancock 1942	—	Eur., N. Asia

CALLIPELTIS $x = 11$

<i>cucullaria</i>	22	Fagerlind 1934	—	Caucasus
-------------------	----	----------------	---	----------

CHOMELIA $x = 11$

<i>asiatica</i>	22	Raghavan & R. 1941	—	India
-----------------	----	--------------------	---	-------

EXOSTEMMA $x = 11$

<i>subcordata</i>	22	Fagerlind 1937	—	W. Indies
-------------------	----	----------------	---	-----------

GARDENIA $x = 11$

<i>jasminoides</i> Cape Jasmine	22	Fagerlind 1937	HP	China, Japan
<i>intermedia</i>	22	" "	H	<i>cult</i>
<i>spatulifolia</i>	22	" "	—	Trop. Africa
<i>thunbergia</i>	22	" "	H	S. Africa

MACROSPHYRA $x = 11$

<i>longistyla</i> , as <i>G. longistella</i>	22	Raghavan & R. 1941	—	Trop. Afr.
--	----	--------------------	---	------------

HYMENODICTYON $x = 11$				
<i>excelsum</i>	22	Fagerlind 1937	—	Ind., Malaya
IXORA * $x = 11$				
<i>chinensis</i> & 14 spp.	22	Fagerlind 1937	H	S.E. Asia
<i>finlaysoniana</i>	22	Raghavan & R. 1941	—	Siam
LEPTACTINIA $x = 11$				
<i>mannii</i>	22	Fagerlind 1937	—	Trop. Africa
MERICARPAEA $x = 11$				
<i>vaillantoides</i>	22	Fagerlind 1937	—	W. Asia
MITCHELLA $x = 11$				
<i>repens</i> Partridge Berry	22	Atchison 1947a	HM	N. Amer., Japan
MITRIOSTIGMA $x = 11$				
<i>axillare</i>	22	Snoad 1952	H	S. Africa
MORINDA $x = 11$				
<i>tinctoria</i>	22	Raghavan & R. 1941	D	India, Malaya
OPHIORRHIZA $x = 11$				
<i>brunonis</i>	22	Raghavan & R. 1941	—	India
PHYLLIS $x = 11$				
<i>nobla</i>	22	Fagerlind 1934	—	Canaries, Madeira
PORTLANDIA $x = 11$				
<i>grandiflora</i>	c. 22	Fagerlind 1937	H	W. Indies
PUTORIA $x = 11$				
<i>calabrica</i>	22	Fagerlind 1937	H	Medit.
RANDIA $x = 11$				
<i>dumetorum</i>	22	Fagerlind 1937	D	Trop. Asia
<i>longiflora</i>	22	" "	—	Ind., Malaya
<i>maculata</i>	22	" "	—	Trop. Africa
SERISSA $x = 11$				
<i>foetida (japonica)</i>	22	Fagerlind 1937	—	China, Japan
SHERARDIA $x = 11$				
<i>arvensis</i> Field Madder	22	Fagerlind 1937	—	Eur., T. Asia
WARBURGINA $x = 11$				
<i>factorovskyi</i>	22	Fagerlind 1937	—	Palest., Syria
CEPHAELIS (URAGOGA) $x = 11$				
<i>peduncularis</i>	22	Fagerlind 1937	H	Sierra Leone
<i>ipecacuanha</i> Ipecacuanha	{ 22 44	{ E.K.J.* "	M	Brazil
COFFEA $x = 11$				
<i>bengalensis</i>	22	Fagerlind 1937	—	Ind., Malaya
<i>canephora</i> Quillow Coffee	22	Doughty 1939	B	Trop. Africa
<i>dewevrei</i>	22	Krug 1937	—	"

COFFEA (cont.)

<i>dybowskii</i>		22	Krug 1937	—	Trop. Africa
<i>eugenoides</i>	E. African C.	22	Doughty 1939	B	E. Africa
<i>excelsa</i>	Senoussi C.	22	Heyn 1936	B	W. Africa
<i>robusta</i>	Congo C.	22	" "	B	Trop. Africa
<i>semiexserta</i>		22	Homeyer 1935	—	E. Indies
<i>stenophylla</i>	Sierra Leone C.	22	Fagerlind 1937	B	Abyssinia
<i>ugandae</i>		22	Krug 1936	—	Trop. Africa
<i>abeokutae</i>		{ 22	Heyn 1936	B	"
		{ 44	Fagerlind 1937		
<i>congensis</i>		{ 22	Krug 1934	B	Congo
		{ 44	Fagerlind 1937		
<i>liberica</i>	Liberian C.	{ 22	" "	B	Trop. Africa
		{ 44	Heyn 1936		
<i>arabica</i>	Mocha C.	44	Mendes 1945	B	"
v. <i>nacional</i> etc.		44	Krug 1936		
v. <i>bullata</i>		44, 66, 88	" 1936, 1937		

COPROSMA $x = 11$

<i>baueri</i>		{ 22	Poucques 1949a	H	New Zealand
		{ 44	Fagerlind 1937		
<i>robusta</i>		{ 22	Poucques 1949a	H	"
		{ 44	Fagerlind 1937		
<i>acerosa</i>		44	" "	H	"
<i>cunninghamii</i>		44	" "	H	"
<i>lucida</i>		44	" "	H	"

CRUCIANELLA * $x = 11$

<i>angustifolia</i>		22	Poucques 1949a	H	C. Eur., Medit.
<i>glauca</i>	& 9 spp.	22	Fagerlind 1937	H	Persia
<i>latifolia</i>		{ 22	Poucques 1949a	H	Medit.
		{ 44	Fagerlind 1937		

LEPTODERMIS $x = 11$

<i>lanceolata</i>		{ 22	Poucques 1949a	—	Himalayas
		{ c. 66	Fagerlind 1937		
<i>pilosa</i>		44	" "	—	China

MUSSAENDA * $x = 11$

<i>corymbosa</i>		22	Raghavan & R. 1941	—	India
<i>erythrophylla</i>	& 3 spp.	22	Fagerlind 1937	H	Trop. Africa
<i>stenocarpa</i>		c. 70	" "	—	"

PAVETTA * $x = 11$

<i>indica</i>	& 2 spp.	22	Fagerlind 1937	MMa	Tr. Asia & Aust.
<i>gardeniifolia</i>		44	" "	—	Abyssinia

PSYCHOTRIA $x = 11$

<i>bacteriophila</i>	C. Is. Wild Coffee	22	Fagerlind 1937	Ma	Comoro Is.
<i>brasiliensis</i>		22	" "	—	Brazil
<i>emetica</i>		22	" "	M	Peru
<i>hirtella</i>		22	" "	—	Tr. E. Africa
<i>undulata</i>	Seminole Wild C.	22	" "	Ma	W. Indies
<i>africana</i>		44	" "	—	Africa

RUBIA $x = 11$

<i>cordifolia</i>	Indian M.	22	Homeyer 1935	D	Tr. Asia and Afr.
-------------------	-----------	----	--------------	---	-------------------

RUBIA (cont.)

<i>tinctorum</i>	Madder	{ 22, 44	Poucques 1949a	D	S.E. Eur., S.W. Asia
<i>oliverii</i>		44	Fagerlind 1937	—	E. Europe
<i>cordata</i>		44	" 1937	D	Tr. Asia & Amer.
<i>peregrina</i>	Levant M.	{ c. 132	Poucques 1949a	D	Eur., Medit.
			Fagerlind 1937		
CEPHALANTHUS x = 11					
<i>occidentalis</i>	Button Bush	44	Fagerlind 1937	H	N. America
GUETTARDA x = (11), 22					
<i>speciosa</i>		44	Raghavan & R. 1941		Trop. Asia
LUCULIA x = 11					
<i>pinceana</i>		44	Fagerlind 1937	—	Himalaya
MYRMECODIA x = (11), 22					
<i>platyrea</i>		44	Homeyer 1935	—	S.E. Asia
<i>echinata</i>		{ 44	Fagerlind 1937	—	"
		88	Homeyer 1935		
NERTERA x = 11					
<i>depressa</i>	Bead Plant	44	Fagerlind 1937	H	S. Am., N.Z., Tas.
HYDNOPHYTUM x = (11), 22					
<i>formicarum</i>		44	Fagerlind 1937	—	E. Indies
PLECTRONIA x = (11), 22					
<i>parviflora</i>		44	Raghavan & R. 1941	—	Burma, Malaya
SARCOCEPHALUS x = (11), 22					
<i>diderrichii</i>		44	Fagerlind 1937	—	Trop. Africa
<i>esculentus</i>	Negro Peach	44	" "	DFM	"
VANGUERIA x = (11), 22					
<i>edulis</i>	Voa Vanga	44	Fagerlind 1937	F	Trop. Africa
<i>acutiloba</i>		44	" "	F	E. Africa
CATESBAEA x = 12					
<i>latifolia</i>		24	Fagerlind 1937	—	W. Indies
HAMELIA x = 12					
<i>patens (erecta)</i>		24	Fagerlind 1937	H	Trop. Amer.
HOFFMANNIA x = 12					
<i>discolor</i>		48	Fagerlind 1937	H	Mexico
<i>ghiesbreghtii</i>		48	" "	H	"
<i>refulgens</i>		48	" "	H	"
<i>roezlii</i>		48	" "	H	cult
<i>regalis</i>		48	Homeyer 1935	H	Mexico
RICHARDIA (RICHARDSONIA) x = 14					
<i>pilosa</i>		28	Fagerlind 1937		Trop. America
<i>scabra</i>	Mex. Clover	28	" "	H	"

SPERMACOCE $x = 14$

<i>tenuior</i>		28	Fagerlind 1937	—	Trop. America
<i>hispidia</i>		56	Raghavan & A. R. S. 1941	—	O.W. Tropics
<i>stricta</i>		56	Raghavan & R. 1941	—	" "

CINCHONA $x = 17$

<i>calisaya</i>	Yellow C.	34, (68)	Dawson 1948	M	Bolivia
<i>ledgeriana</i>		34, (68)	" "	M	"
<i>succirubra</i>	Red C.	34, (68)	" "	M	Ecuador

POSOQUERIA $x = 17$

<i>cookii</i>		34	Fagerlind 1937	H	<i>cult</i>
<i>longiflora</i>		34	" "	H	Guiana

233 CAPRIFOLIACEAE

KOLKWTZIA $x = (8), 16$

<i>amabilis</i>		32	Sax & K. 1930	H	C. China
-----------------	--	----	---------------	---	----------

LINNAEA $x = (8), 16$

<i>americana</i>		32	L. & L. 1944b	H	Eur., N. Amer.
<i>borealis</i>		32	Ehrenberg 1945	H	" "

VIBURNUM $x = 8, 9, 10$
 $x = 8$

<i>bitchiuense</i>		16	Janaki Ammal 1953a	H	W. Japan
<i>foetens</i>		16	" "	H	N.W. Himal., Kashmir
<i>foetidum</i>		16	" "	H	W. China
<i>grandiflorum</i>		16	" "	H	Himal., Bhutan
<i>mongolicum</i>		16	" "	—	E. Sib., Kansu
<i>suspensum</i>		16	" "	H	Liukiu Is.
as <i>sandankwa</i>		18	Poucques 1949a		
<i>wrightii</i>		16	Janaki Ammal 1953a	H	Japan
<i>fragrans</i>		16	" "	H	Kansu
v. <i>alba</i>		32	" "	H	" <i>cult</i>
<i>erubescens</i>		48	" "	H	Szechuan, Hupeh, Nilgris, Himal.
<i>henryi</i>		48	" "	H	Hupeh, Szech., Yunnan

 $x = 9$

<i>acerifolium</i>	Dockmackie	18	" "	H	N. America
<i>alnifolium</i>	Hobble Bush	18	" "	H	"
<i>betulifolium</i>		18	" "	H	C. & W. China
<i>cinnamomifolium</i>		18	" "	H	W. China
<i>cotinifolium</i>		18	Poucques 1949a	H	Himalayas
<i>davidi</i>		18	Janaki Ammal 1953a	H	W. China
<i>furcatum</i>		18	" "	H	Japan
<i>harryanum</i>		18	Poucques 1949a	H	W. China
<i>lantana</i>	Wayfaring Tree	18	Janaki Ammal 1953a	H	Eur., W. Asia
<i>lentago</i>	Nannyberry	18	" "	FH	W: N. Amer.
<i>nudum</i>		18	" "	H	"
<i>opulus</i>	Guelder Rose	18	" "	HM	Eur., N. Asia, N. Africa
<i>ovalifolium</i>		18	" "	—	W. China

VIBURNUM (cont.)

<i>propinquum</i>	18	Pouques 1949a	H	C. & W. China
<i>prunifolium</i> Black Haw	18	Janaki Ammal 1953a	FHM	W: N. America
<i>rhytidophyllum</i>	18	" "	H	C. & W. China
<i>sargentii</i>	18	Sax & K. 1930	H	N.E. Asia
<i>tomentosum</i>	18	Janaki Ammal 1953a	H	China, Japan
<i>trilobum</i> Am. Cranberry Bush	18	" "	F	N. America
<i>utile</i>	18	" "	H	C. China
<i>carlesii</i>	18	Pouques 1949a,	H	Korea
	20	Janaki Ammal 1953a		
<i>lobophyllum</i>	18	Sax & K. 1930	H	C. & W. China
	20, 22	Janaki Ammal 1953a		
<i>tinus</i> Laurustinus	36	" "	H	S.E. Europe
<i>dentatum</i>	54	" "	H	N. America
<i>x = 10</i>				
<i>buddleifolium</i>	20	" "	H	C. China
<i>odoratissimum</i> Sweet V.	40	" "	H	India, China

ABELIA *x* = (8), 16, 18

<i>engleriana</i>	32	Sax & K. 1930	H	C. & W. China
<i>uniflora</i>	36	Pouques 1949a	H	E. China

DIERVILLA *x* = 9

<i>lonicera</i>	18	Pouques 1949a	H	E: N. America
<i>rivularis</i>	36	Sax & K. 1930	H	S.E: U.S.A.
<i>sessilifolia</i>	36	" "	H	"
<i>splendens</i>	36	Pouques 1949a	H	<i>cult</i>

WEIGELA (DIERVILLA) *x* = 9

<i>japonica</i>	18	Pouques 1949a	H	Japan
<i>florida (candida)</i>	36	" "	H	N. China
<i>hortensis</i>	36	Sax & K. 1930	H	Japan
<i>praecox</i>	36	" "	H	Korea

LONICERA *x* = 9

<i>altmanni</i>	18	Jan. Ammal & S. '52	—	Turkestan
<i>bella</i>	18	Pouques 1949a	H	<i>cult</i>
<i>biflora</i>	18	Jan. Ammal & S. '52	—	S.W. Eur., N. Afr.
<i>canadensis (ciliata)</i>	18	" "	(F)H	E: N. America
<i>caprifolium</i>	18	Pouques 1949a	H	Eur., W. Asia
<i>chaetocarpa</i>	18	Jan. Ammal & S. '52	H	W. China
<i>chrysantha</i>	18	" "	H	N.E. Asia, Japan
<i>deflexicalyx</i>	18	" "	H	W. China, Tibet
<i>discolor</i>	18	" "	—	Kashmir-Afghan.
<i>etrusca</i>	18	" "	H	Medit.
<i>ferdinandii</i>	18	Pouques 1949a	H	N. China
<i>fragrantissima</i>	18	" "	H	E. China
<i>hildebrandtii</i>	18	Jan. Ammal & S. '52	H	Burma
<i>hispida</i>	18	Pouques 1949a	H	Turkestan—W. China
<i>implexa</i>	18	Jan. Ammal & S. '52	H	Medit.
<i>involucrata</i>	18	" "	(F)H	Can., Rocky Mts.
<i>japonica</i>	18	" "	H	E. Asia
<i>koehneana</i>	18	" "	—	W. China
<i>korolkowii</i>	18	" "	H	Turkestan
<i>ledebourii</i>	18	" "	H	California
<i>maackii</i>	18	Pouques 1949a	H	Manch., Korea

LONICERA (cont.)

<i>maximowiczii</i>		18	Jan. Ammal & S. '52	H	Manch., Korea
<i>minutiflora</i>		18	Poucqes 1949a	H	<i>cult</i>
<i>morrowii</i>		18	Jan. Ammal & S. '52	H	Japan
<i>myrtilloides</i>		18	Poucqes 1949a	H	Himalayas
<i>nervosa</i>		18	Jan. Ammal & S. '52	H	N.W. China
<i>nigra</i>		18	Poucqes 1949a	H	Eur., Korea
<i>nitida</i>		18	" "	H	W. China
<i>orientalis</i>	Buckthorn H.	18	Sax & K. 1930	H	Asia M., Cauc.
<i>pileata</i>		18	Poucqes 1949a	H	S. & W. China
<i>prolifera</i>		18	Jan. Ammal & S. '52	H	U.S.A.
<i>pyrenaica</i>		18	Poucqes 1949a	H	Pyrenees
<i>quinquelocularis</i>		18	" "	H	Himalayas
<i>rupicola</i>		18	Jan. Ammal & S. '52	H	"
<i>ruprechtiana</i>		18	Poucqes 1949a	H	Manch., N. China
<i>splendida</i>		18	Jan. Ammal & S. '52	H	Spain
<i>stabiana</i>		18	Vilmorin & S. 1927b	—	Italy
<i>standishii</i> (sinensis)		18	Poucqes 1949a	H	China
<i>syringantha</i>		18	Jan. Ammal & S. '52	H	N.W. China
<i>tatarica</i>	Tartarian H.	18	" "	H	S. Russ., Alt., Turkestan
<i>tatsienensis</i>		18	Poucqes 1949a	H	W. China
<i>tomentella</i>		18	Jan. Ammal & S. '52	H	Sikkim
<i>trichosantha</i>		18	" "	H	W. China, Tibet
<i>vesicaria</i>		18	" "	—	Korea
<i>xylosteum</i>	Eur. Fly Honey-suckle	18	Poucqes 1949a	H	Eur.—Altai
<i>yunnanensis</i>		18	Jan. Ammal & S. '52	H	S.W. China
<i>alpigena</i>		{ 18 36	{ Poucqes 1949a Jan. Ammal & S. '52	H	C. Europe
<i>coerulea</i>		18, 36	Sax & K. 1930	H	N. Eurasia
<i>glehnii</i>		{ 18 36	{ Poucqes 1949a Jan. Ammal & S. '52	—	Japan, Sakhalin
<i>myrtilus</i>		18	" "	H	Afghan., Himal.
v. <i>depressa</i>		36	" "	H	Alpine Himal.
<i>periclymenum</i>	Woodbine	18, 36	" "	H	Eur., Medit.
<i>sempervirens</i>	Trumpet H.	{ 18 36	{ Poucqes 1949a Jan. Ammal & S. '52	H	E. & C. U.S.A.
<i>tenuipes</i>		{ 18 36	{ " " " " M. & S. 1935	H	Japan
<i>thibetica</i>		18, 36	Sax & K. 1930	H	Tibet, W. Szech.
<i>alseuosmoides</i>		36	" "	H	W. China
<i>microphylla</i>		36	Jan. Ammal & S. '52	H	C. Asia
<i>henryi</i>		54	" "	H	Assam, S.W. Ch.
v. <i>coriacea</i>		54	" "	H	W. Szechuan
<i>tragophylla</i>		54	" "	H	S.W. China

SYMPHORICARPOS $x=9$

<i>orbiculatus</i>	Indian Currant	18	Sax & K. 1930	(F)H	E: N. America
<i>albus</i>	Snowberry	c. 54	" "	(F)H	N. America

SAMBUCUS $x=(9), 18, 19$

<i>ebulus</i>	Dwarf Elder	{ 32 36	{ Battaglia 1946 Poucqes 1949a	H	Eur., N. Afr., Asia
<i>canadensis</i>	Sweet Elder	36	Sax & K. 1930	A(F)M	E: N. America

SAMBUCUS (cont.)

<i>chinensis</i>		36	Suzuka 1950a	—	Trop. Asia
<i>javanica</i>		36	Bowden 1940a	—	"
<i>nigra</i>	European El.	36	Poucques 1949a	AB(F)	Eur., N. Afr., W. Asia
<i>pubens</i>	Red-berried E.	36	Bowden 1940a	H	E: N. America
<i>racemosa</i>	Eur. Red E.	36	Sax & K. 1930	AB(F)	Eur., W. Asia
<i>buergeriana</i>		38	M. & S. 1935	—	Japan

234 ADOXACEAE

ADOXA $x=9$

<i>moschatellina</i>	Moschatel	36	Geitler 1940,		
		36	Poucques 1949a	H	North Reg.
		54	Oikawa 1942		
		56	M. & S. 1935		

235 VALERIANACEAE

KENTRANTHUS (CENTRANTHUS) $x=7$

<i>angustifolius</i>		14	Poucques 1949a	H	S. Europe
<i>gilloti</i>		14	" "	—	France
<i>ruber</i>	Red Valerian	14	" "	H	Eur., S.W. Asia

VALERIANA $x=7, 8$

<i>baltica</i>		14	Runquist 1937	—	Scandinavia
<i>exaltata</i>		14, 18	Skalinska 1950b	—	Europe
<i>officinalis</i>	Valerian, All-heal	14	Poucques 1949a	HM	Eur., N. Asia
		28, 56	Skalinska 1946		
<i>tenuifolia</i>		28	" 1950b	—	C. Europe
<i>wallichii</i>		28	Kishore 1951	M	India
<i>capitata</i>		56	S. & S. 1941	—	Arctic, Alp.
<i>sambucifolia</i>		56	Skalinska 1950b	H	Europe
<i>as excelsa</i>		14, 56	Runquist 1937		
<i>salina</i>		56	" "	—	Scandinavia
<i>x=8</i>					
<i>dioica</i>	Marsh V.	16	Meurman 1925	—	Europe
<i>flaccidissima</i>		16	M. & S. 1935	—	Japan
<i>simplicifolia</i>		16	Skalinska 1950a	—	Europe
<i>tripteris</i>		16	" "	—	"

VALERIANELLA * $x=7, 8, 9$

<i>dentata</i>		14	Elvers 1932b	—	Eur., W. As., N. Africa
<i>eriocarpa</i>	Ital. Corn Salad	14	Poucques 1949a	V	Medit., N. Africa
<i>locusta</i>	Lamb's Lettuce	14	" "	V	Eur., W. As., N. Africa
<i>rimosa</i>	& 4 spp.	14	Elvers 1932b	—	Eur., N. Africa
<i>echinata</i>	Prickly Corn Salad	14	Poucques 1949a	H	S. Eur., Asia M.
		16	Elvers 1932b		
<i>diodon</i>		32	" "	—	Asia Minor
<i>stenaphodon</i>		32	" "	—	Algeria
<i>szovitziana</i>		c. 32	" "	—	Ar., Syr., Persia
<i>uncinata</i>		16	" "	—	Cauc., Persia

VALERIANELLA (cont.)

<i>carinata</i>	18	Elvers 1932b	—	Eur., S.W. Asia
<i>turgida</i>	18	„ „	—	Medit.

FEDIA (MITROPHORA) $x = (8), 16$

<i>cornucopiae</i> Afr. V.	32	Poucques 1949a	V	Medit.
----------------------------	----	----------------	---	--------

PATRINIA $x = 11$

<i>scabiosaefolia</i>	22	Sugiura 1936b	—	N. China
-----------------------	----	---------------	---	----------

236 DIPSACACEAE

CEPHALARIA $x = 5, 9$

<i>syriaca</i>	10	Kachidze 1929	HO	Medit., S.W. Asia
<i>ambrosioides</i>	18	„ „	—	Greece
<i>caucasica</i>	18	„ „	—	Caucasus
<i>graeca</i>	18	„ „	—	Greece
<i>leucantha</i>	18	„ „	H	S.W. Europe
<i>media</i>	18	„ „	—	Transcaucasia
<i>rigida</i>	18	„ „	H	S. Africa
<i>transsylvanica</i>	18, 36	Poucques 1949a	H	S.E. Eur., S.W. Asia
<i>uralensis (corniculata)</i>	18	Kachidze 1929	—	Banat
<i>as laevigata</i>	36	„ „	—	—
<i>alpina</i> Yellow C.	36	„ „	H	Europe
<i>tatarica</i>	36	„ „	H	N. & W. As., Russ.
<i>tchihatchewi</i>	36	„ „	H	Armenia

CALLISTEMMA $x = 7$

<i>brachiatum</i>	14	Kachidze 1929	H	E. Medit.
-------------------	----	---------------	---	-----------

DIPSACUS $x = 8, 9$

<i>laciniatus</i>	16	Poucques 1949a	H	Eur., S.W. Asia
	18	Kachidze 1929	—	—
<i>sylvestris</i> Wild T.	16	Poucques 1949a	H	Eur., S.W. Asia,
	18	Kachidze 1929	—	N. Africa
<i>azureus</i>	18	„ „	H	Siberia
<i>ferox</i>	18	„ „	—	Corsica
<i>fullonum</i> Fuller's Teasel	18	„ „	HTo	Eur., Cauc.
<i>as sativus</i>	18	„ „	—	—
<i>inermis</i> Spineless T.	18	„ „	H	Himalayas
<i>japonicus</i>	18	Suzuka 1950	—	China, Japan
<i>pilosus</i>	18	Kachidze 1929	H	Eur., Cauc.
<i>torsus?</i>	18	„ „	—	—
<i>chinensis</i> China T.	36	„ „	H	China

SCABIOSA * $x = 8, 9$

$x = 8$

<i>atropurpurea</i> Sweet Scabious	16	Braun, T. 1937	H	Medit., Canaries
<i>caerulea</i>	16	Risse 1928	—	E. Europe
<i>canescens</i>	16	L. & L. 1944b	H	Cent. Europe
<i>columbaria</i> Small S. & 7 spp.	16	Kachidze 1929	H	Old World
<i>daucoides</i>	16	Risse 1928	—	Algeria
<i>lucida</i>	16	Poucques 1949a	H	Cent. Europe
<i>purpurea</i>	16	Poddubnaja 1933b	—	Caucasus
<i>suaveolens</i>	16	Poucques 1949a	H	C. Eur., Asia M.

SCABIOSA (cont.)

$x = 9$

<i>cretica</i>	& 5 spp.	18	Kachidze 1929	—	Crete, Sicily
<i>prolifera</i>	Carmel Daisy	18	" "	H	Syr.-Cyp.
<i>stellata</i>		36	" "	—	W. Medit.
<i>caucasica</i>		36, 54	" "	H	Cauc., C. Asia

KNAUTIA (SCABIOSA) $x = 8, 10$

$x = 8$

<i>magnifica</i>		16	Chiarugi 1927b	—	Macedonia
<i>orientalis</i>		{ 16	Kachidze 1929,	—	S.W. Asia
		16	Poucques 1949a		
<i>sylvatica</i>		16	Risse 1928	H	Caucasus
<i>v. dipsacifolia</i>		48	Chiarugi 1927c		
		16?	Poucques 1949a		
<i>arvensis</i>	Field S.	20	Wulff 1938	H	Eur., Caucasus
		40	Kachidze 1929,		
		40	L. & L. 1944b		

$x = 10$

<i>hybrida (integrifolia)</i>		20	Kachidze 1929	H	Gr., Asia M.
<i>purpurea</i>		20	" "	—	Caucasus

SUCCISA (SCABIOSA) $x = 8, 10$

<i>inflexa</i>		16	Poucques 1949a	—	Europe
<i>australis</i>		20	Kachidze 1929	H	S. Europe
<i>pratensis</i>	Devil's Bit Sc.	20	" "	H	Europe

PTEROCEPHALUS (SCABIOSA) $x = 9$

<i>parnassi (S. pterocephala)</i>		18	Kachidze 1929	H	Greece
<i>plumosus</i>		18	" "	—	Asia Minor

MORINA $x = 17$

<i>longifolia</i>	Whorl Fl.	{ 34	Kachidze 1929	H	Himalayas
		34	Poucques 1949a		
<i>persica</i>		34	Kachidze 1929	—	Himal., S.W. As.

238 COMPOSITAE

Order of the Tribes with their Basic Numbers

I Cichorieae: 3-9	VIII Arctotideae: 5, 7, 8, 9
II Heliantheae: 4-19	IX Calenduleae: 7, 8, 9, 10
III Astereae: 4, 5, 6, 9	X Anthemideae: 8, 9, 10, 17
IV Inuleae: 5, 7, 8, 9, 10, 11 13	XI Vernonieae: 9, 11
V Cynareae: 6-18	XII Eupatorieae: 10, 17, 19
VI Senecioneae: 5, 9, 11, 12, 23, 26, 29	XIII Mutisieae: 18, 23, 24, 25, 27
VII Helenieae: 7-17	

TRIBE I: CICHORIEAE

CREPIS (115 species counted) *

A. RHIZOMATOUS $x = 4, 5, 6, 8$

<i>chrysanthia</i>	& 5 spp.	8	Babcock 1947	—	C. & N.E. Asia
<i>aurea</i>	& 2 spp.	10	" "	—	C. & E. Europe
<i>pygmaea</i>	& 13 spp.	12	" "	—	Eur. Alps
<i>polytricha</i>		16	" "	—	C. Asia

CREPIS (cont.)

B. PRIMITIVE TAP-ROOTED		$x = 4, 5, 7, 8, x_2 = 11$ (High Polyploids Apomictic)			
<i>tectorum</i>	& 17 spp.	8	Babcock 1947	—	Eur., Temp. Asia
<i>albida</i>	& 10 spp.	10	" " '51	—	S. Eur., N. Afr.
<i>flexuosa</i>	& 2 spp.	14	" "	—	C. Asia
<i>crocea</i>	& 1 sp.	16	" "	—	C. & E. Asia
<i>runcinata</i>		22	" "	—	W: N. Amer.
<i>bakeri</i>		22-55	" "	—	"
<i>acuminata</i>	& 5 spp.	22-88	" "	—	"
<i>intermedia</i>		33-88	" "	—	"
<i>barbigera</i>		44-88	" "	—	"
<i>biennis</i>		40	" "	—	Eur., W. Asia
<i>ciliata</i>		40	" "	—	S. Caucasus
<i>taygetica</i>		40	" "	—	S. Greece
C. ADVANCED TAP-ROOTED		$x = 3, 4, 5$			
<i>capillaris</i>		6	Babcock 1947	—	Europe
<i>fuliginosa</i>		6	" "	—	E. Medit.
<i>zacintha</i>		6	" "	—	Medit.
<i>neglecta</i>		8	" "	—	S. Eur., Asia M.
<i>setosa</i>	& 31 spp.	8	" "	—	" "
<i>vesicaria</i>		8, 16	" "	—	Medit.
<i>foetida</i>		10	" "	—	Eur., As. M., Pers.
<i>rubra</i>	& 4 spp.	10	" "	—	S.E. Eur., Asia M.
<i>syriaca</i>		10 + 0-8B	" "	—	Syria, Palestine

HYPOCHAERIS (HYPOCHOERIS)*		$x = 3, 4, 5$			
<i>cretensis</i>		6	Stebbins <i>et al.</i> 1953	—	Crete
<i>pinnatifida</i>		6	" "	—	Corsica
<i>aetnensis</i>		12	" "	—	Europe
<i>brasilensis</i>	& 2 spp.	8	" "	—	Urug., Argent.
<i>elata</i>		8	Krapovickas 1951a	—	S. America
<i>halophila</i>		8	Schnack & C. 1947	—	"
<i>radicata</i>	Cat's Ear	8	Stebbins <i>et al.</i> 1953	—	Eur., N. Africa
<i>tweedii</i>	& 3 spp.	8	Saez 1949a	—	S. America
<i>stenocephala</i>		16	Stebbins <i>et al.</i> 1953	—	Andes
<i>maculata</i>	& 2 spp.	10	" "	—	Eur., W. Asia
<i>uniflora</i>		10	Szwabowicz 1954	—	Europe
<i>glabra</i>		{ 10	Stebbins <i>et al.</i> 1953	—	"
		{ 12	Negodi 1935	—	"

ROBERTIA $x = 4$					
<i>taraxacoides</i>		8	Martinoli 1953	—	Medit.

HEDYPNOIS (RHAGADIOLUS) $x = 4$					
<i>cretica</i>		8	Stebbins <i>et al.</i> 1953	—	Medit.
<i>globulifera</i>		16	Negodi 1936b	—	"
<i>tubaeformis</i>		16	Stebbins <i>et al.</i> 1953	—	"

LEONTODON $x = 4, 5, 6, 7$ (Apomictic)					
<i>asperrimus</i>		8	Stebbins <i>et al.</i> 1953	—	S. Eur., S.W. Asia
<i>graecum</i>		8	" "	—	Greece
<i>nudicaulis</i>		{ 8	" "	—	Europe
as <i>Thrinicia hirta</i>		{ 10	Wulff 1937b	—	"
<i>helveticus</i>		12	Favarger 1953	—	S. Eur. mtns.
<i>montanus</i>		12	" "	—	" "
<i>autumnalis</i>		{ 12	Bergman 1935c	—	Europe
		{ 24	L. & L. 1948	—	"
<i>crispus</i>		14	Bergman 1935c	—	S. Europe

LEONTODON (cont.)

<i>hispidus</i>	{ 14 + B	Elliot 1950	—	Eur., S.W. Asia
<i>villarsii</i>		Bergman 1935c	—	Europe

GARHADIOLUS $x = 5$

<i>hedypnois</i>	10	Stebbins <i>et al.</i> 1953	—	S.W. Asia
------------------	----	-----------------------------	---	-----------

PICRIS $x = 5$

<i>echioides</i>	10	Schnack & C. 1947	H	Medit., N. Afr.
<i>hieracioides</i>	10	Bergman 1932	—	Eur., Temp. Asia

RHAGADIOLUS $x = 5$

<i>edulis</i>	10	Stebbins <i>et al.</i> 1953		Medit., Asia M.
<i>stellatus</i>	10	„ „	—	Medit.

WILLEMETIA $x = 5$

<i>stipitata</i>	10	Stebbins <i>et al.</i> 1953	—	Alps
------------------	----	-----------------------------	---	------

CHONDRILLA $x = 5$ (Apomixis) *

<i>ambigua (pauciflora)</i>	10	Poddubnaja 1933a	—	Russia, Siberia
<i>chondrilloides</i>	10	Bergman 1952	—	E. Eur. mtns.
<i>juncea</i>	15	Battaglia 1949	—	Eur., C. Asia
<i>leiosperma</i> & 5 spp.	15	Poddubnaja 1933a	—	„ „
<i>ornata</i> & 1 sp.	20	„ „	—	Russia, C. Asia

KRIGIA $x = 5$

<i>virginica</i>	10	Stebbins <i>et al.</i> 1953	—	E. U.S.A.
<i>dandelion</i>	59	„ „	—	„

IXERIS (LACTUCA, CREPIDIASTRUM)* $x = 5, 6, 7, 8$ (Triploid Apomictic)

<i>denticulata</i>	10	Ono 1943	—	Japan
<i>lanceolata</i> & 2 spp.	10	Babcock <i>et al.</i> 1937	—	„
<i>alpicola</i>	14	Ishikawa 1921	—	„
<i>dentata</i>	{ 21	Babcock <i>et al.</i> 1937	—	„
		24 Ono 1941	—	„
<i>stolonifera</i> & 3 spp.	16	Babcock <i>et al.</i> 1937	—	„
<i>chinensis</i>	32	„ „	—	„
<i>japonica</i> (3x)	48	Ishikawa 1921	—	„

YOUNGIA (LACTUCA, CREPIS) * $x = 5, 8$

<i>tenuifolia</i>	15, 20	Babcock <i>et al.</i> 1937	—	Himal., N. Asia
<i>japonica</i> & 2 spp.	16	„ „	—	Japan
<i>paleacea</i>	32	„ „	—	Yunnan

LYGODESMIA $x = 6$

<i>rostrata</i>	12	Stebbins <i>et al.</i> 1953	—	W: N. America
-----------------	----	-----------------------------	---	---------------

PYRRHOPAPPUS $x = 6$

<i>carolinianus</i>	12	Stebbins <i>et al.</i> 1953	—	E. U.S.A.
<i>rothrockii</i>	12	„ „	—	„

LAPSANA $x = 6, 7$

<i>communis</i> Nipplewort	{ 12	L. & L. 1948	—	Eur., N. & S.W.
		14 Stebbins <i>et al.</i> 1953	—	Asia

SCORZONERA * $x = 6, 7$

<i>deliciosa</i>	Sicilian Sc.	12	Telezynski, T. 1931	R	Sicily
<i>tuberosa</i>	& 2 spp.	12	Poddubnaja <i>et al.</i> '35	R	Turkestan
<i>nervosa</i>		12, 13	Krajevoy 1934b	—	Arm., Persia
<i>acanthoclada</i>	& 3 spp.	14	P. <i>et al.</i> 1935	—	Turkestan
<i>cana</i>		14	Polya 1948	—	E. Eur., Asia M.
<i>hispanica</i>	Black Salsify	14	P. <i>et al.</i> 1935	R	S. Europe
<i>humilis</i>		14	Wulff 1938	—	Europe
<i>tau-saghyz</i>	Tau Saghyz	14	Krajevoy 1934a	Ru	N. Asia

TRAGOPOGON* $x = 6, 7$

<i>dubius (major)</i>	& 1 sp.	12	P. <i>et al.</i> 1935	R	Europe
<i>porrifolius</i>	Salsify	12	" "	R	Medit.
<i>pratensis</i>	Goat's Beard	12	Winge 1926	HR	Eur., Cauc.—Sib.
<i>cupani</i>		24	P. <i>et al.</i> 1935	R	Sicily
<i>mirus</i>		24	Ownbey 1950	—	N.W: U.S.A.
<i>miscellus</i>		24	" "	—	"
<i>crocifolius</i>		14	R. D. Brock unp.	H	Italy

ANISOCOMA $x = 7$

<i>acaulis</i>		14	Stebbins <i>et al.</i> 1953	—	Calif., Nevada
----------------	--	----	-----------------------------	---	----------------

CALYCOSERIS $x = 7$

<i>wrightii</i>		14	Stebbins <i>et al.</i> 1953	—	S.W: U.S.A.
-----------------	--	----	-----------------------------	---	-------------

LAUNAEA $x = 7, 8, 9$

<i>arborescens</i>		14	Stebbins <i>et al.</i> 1953	—	N.W. Africa
<i>integrifolia</i>		16	Hagerup 1932	—	Sudan
<i>pumila</i>		16	Lorenzo-Andreu & G. 1950	—	Spain, Arabia
<i>quercifolia</i>		16	Stebbins <i>et al.</i> 1953	—	N. Africa
<i>resedifolia</i>		16	" "	—	Algeria
<i>acaulis</i>		18	" "	—	India
<i>nudicaulis</i>		18	" "	—	Medit., S.W. Asia

MALACOTHRIX * $x = 7, 9$

<i>californica</i>	& 5 spp.	14	Stebbins <i>et al.</i> 1953	—	W: U.S.A.
<i>clevelandii</i>		14, 28	" "	—	"
<i>saxatilis</i>		18	" "	—	"

SONCHUS * $x = 7, 8, 9$

$x = 7$					
<i>tenerrimus</i>		14	Stebbins <i>et al.</i> 1953	—	Medit.
$x = 8$					
<i>oleraceus</i>	Sow or Milk Thistle	32	" "	Fo(V)	Cosmop.
<i>arvensis</i>		64	Wulff 1937b	—	Eur., W. Asia
$x = 9$					
<i>asper</i>	& 7 spp.	18	Stebbins <i>et al.</i> 1953	—	Cosmop.
<i>grandifolius</i>		36	" "	—	New Zealand
<i>javanicus</i>		54	" "	—	Java
<i>oleraceus</i> × <i>asper</i>	(16 + 9)	25	Barber 1941b		<i>nat. hybrid</i>

APOSERIS $x = 8$					
<i>foetida</i>		16	Stebbins <i>et al.</i> 1953	—	Alps
DUBYAEA (LACTUCA) * $x = 8$					
<i>hispida</i>	& 1 sp.	16	Babcock <i>et al.</i> 1937	—	Asia M., Syria
HYOSERIS * $x = 8$					
<i>radiata</i>		16	Stebbins <i>et al.</i> 1953	—	Medit.
<i>lucida</i>	& 2 spp.	16	Martinoli 1953	—	"
RAFINESQUIA * $x = 8$					
<i>californica</i>	& 1 sp.	16	Stebbins <i>et al.</i> 1953	—	California
REICHARDIA (PICRIDIMUM) $x = 8$					
<i>tingitana</i>		16	Telezinsky, T. 1931	D?	Medit., S.W. Asia
STEPHANOMERIA * $x = 8$					
<i>cichoriacea</i>	& 3 spp.	16	Stebbins <i>et al.</i> 1953	—	W: U.S.A.
<i>virgata</i>		16, 32	" "	—	"
TARAXACUM * $x = 8$ (Polyploids Apomictic)					
<i>bessarabicum</i>	& 4 spp.	16	Poddubnaja & D. '34	V	Eur., N. Asia
<i>kok-saghyz</i>	Kok-Saghyz	16 (32)	Navashin & G. 1941	Ru	Turkestan
<i>laevigatum</i>	Smooth D.	24	Poddubnaja & D. '34	(V)M	N. & S. Temp.
<i>parnassicum</i>		24	" "	Ru	Greece
<i>robustum</i>		24	" "	Ru	Japan
<i>vulgare</i>	Dandelion	16, 24, 48	Woess 1949	M(V)	N. & S. Temp.
	(22-26, 33, 46-48)		Sorensen & G. 1946		
<i>hybernum (gymnanthum)</i>		32	Poddubnaja & D. '37	Ru	Medit.
<i>megakorrhizon</i>	Krim-Saghyz	32	Battaglia 1948	Ru	Crimea
other apomicts	24, 32, 40, 48	{ Battaglia 1948, Erlandsson 1939b, Gustafsson '32, '35a, b, Poddubnaja & D. '37			
PRENANTHES (CREPIS) * $x = 8, 9$					
<i>nana</i>	& 5 spp.	16	Babcock <i>et al.</i> 1937	—	N. America
<i>alba</i>		32	" "	—	"
<i>purpurea</i>	& 1 sp.	18	" "	—	Europe
LACTUCA (MULGEDIUM) * $x = 8, 9$ (Old World). $x_2 = 17$ (New World)					
$x = 8$					
<i>aurea</i>		16	Babcock <i>et al.</i> 1937	—	Europe
<i>bracteata</i>	& 8 spp.	16	" "	—	Himalayas
<i>bourgaei</i>	Bourget	16	Whitaker & J. 1939	—	Asia Minor
<i>macrantha</i>	& 5 spp.	16	Stebbins <i>et al.</i> 1953	—	India
$x = 9$					
<i>chondrillaeflora</i>		18	Whitaker & J. 1939	—	S. Europe
<i>perennis</i>	Perennial L.	18	Thompson <i>et al.</i> '41	—	Europe
<i>raddiana</i>		18	" "	—	Japan
<i>saligna</i>	& 3 spp.	18	" "	—	Europe
<i>sativa</i>	Lettuce	{ (36 + B)	" "	V	<i>cult</i>
			Einset 1944		
<i>serriola</i>	Prickly L.	18	Thompson <i>et al.</i> '41	V	Europe
<i>squarrosa</i>		18	Ono 1943	—	Japan
<i>tatarica</i>		18	Whitaker & J. 1939	—	India, W. Asia
<i>viminea</i>		18	Babcock <i>et al.</i> 1937	—	Turkey

LACTUCA (cont.)					
<i>virosa</i>	Wild L.	18	Thompson <i>et al.</i> '41	M	Europe
<i>orientalis</i>		36	Babcock <i>et al.</i> 1937	—	Himalayas
$x_2 = 17$					
<i>campestris</i>		34	Babcock <i>et al.</i> 1937	—	E: N. America
<i>canadensis</i>		34	Whitaker & J. 1939	—	" "
<i>ludoviciana</i>		34	Stebbins <i>et al.</i> 1953	—	" "
<i>spicata</i>	& 3 spp.	34	Thompson <i>et al.</i> '41	—	" "
MYCELIS (LACTUCA) $x = 9$					
<i>muralis</i>	Wall Lettuce	18	Thompson <i>et al.</i> '41	—	Eur., Asia M., Caucasus
CEPHALORRHYNCHUS (LACTUCA) $x = 9$					
<i>glandulosus</i>		18	Babcock <i>et al.</i> 1937	—	Asia Minor
APARGIDIUM $x = 9$					
<i>boreale</i>		18	Stebbins <i>et al.</i> 1953	—	N. America
ANDRYALA * $x = 9$					
<i>integrifolia</i>	& 2 spp.	18	Stebbins <i>et al.</i> 1953	—	Medit.
ARNOSERIS $x = 9$					
<i>maxima</i>		18	Wulff 1939b	—	Europe
<i>minima</i>	Lamb's Succory	18	Stebbins <i>et al.</i> 1953	—	"
	(<i>pusilla</i>)				
ATRICHOSERIS $x = 9$					
<i>platyphylla</i>		18	Stebbins <i>et al.</i> 1953	—	S.W: U.S.A.
CATANANCHE $x = 9$					
<i>lutea</i>		18	Stebbins <i>et al.</i> 1953	—	Medit.
CHAETADELPHA $x = 9$					
<i>wheeleri</i>		18	Stebbins <i>et al.</i> 1953	—	W: U.S.A.
CICERBITA (LACTUCA, SONCHUS) $x = 9$					
<i>alpina</i>		18	Stebbins <i>et al.</i> 1953	—	Arctic, Alpine
CICHORIUM $x = 9$					
<i>intybus</i>	Chicory	18	Stebbins <i>et al.</i> 1953	BV	Eur., S.W. Asia, N. Africa
<i>endivia</i>	Endive	{ 18 Rick 1953 36 Thomas 1945*	V		Eur., S.W. Asia
GLYPTOPLEURA $x = 9$					
<i>marginata</i>		18	Stebbins <i>et al.</i> 1953	—	S.W.: U.S.A.
PHALACROSERIS $x = 9$					
<i>bolanderi</i>		18	Stebbins <i>et al.</i> 1953	—	N. America
TOLPIS * $x = 9$					
<i>succulenta</i>	& 3 spp.	18	Stebbins <i>et al.</i> 1953	—	Canary Is.
HIERACIUM * $x = 7?, 9$					
<i>japonicum</i>		14	M. & S. 1935	—	Japan
sexual species		18	Bergman 1941, Böcher & L. 1950	—	N. Temp.

HIERACIUM (cont.)

apomicts	27, 36, 45	<div> <div>Christoff & C. 1948, —</div> <div>Favarger 1949b, 1953,</div> <div>Gentcheff & G. 1940b,</div> <div>Gustafsson 1935, 1947,</div> <div>Stebbins <i>et al.</i> 1953</div> </div>			N. Temp.
AGOSERIS* $x=9$					
<i>grandiflora</i> & 1 sp.	18	Stebbins <i>et al.</i> 1953	—		W: N. America
<i>glauca</i>	18, 36	" "	—		"
<i>heterophylla</i>	18, 36	" "	—		"
<i>apargioides</i>	36	" "	—		"
MICROSERIS* $x=9$					
<i>laciniata</i> & 7 spp.	18	Stebbins <i>et al.</i> 1953	—		W: N. America
<i>acuminata</i>	36	" "	—		"
<i>lindleyi</i>	36	" "	—		"
PINAROPAPPUS $x=9$					
<i>roseus</i>	18, 36	Stebbins <i>et al.</i> 1953	—		Tex., Mex.
DENDROSERIS $x=9$					
<i>macrophylla</i>	36	Stebbins <i>et al.</i> 1953	—		Juan Fernandez
<i>pinnata</i>	36	" "	—		" "
KOELPINIA $x=9$					
<i>linearis</i>	54	Stebbins <i>et al.</i> 1953	—		S.W. As., N. Afr.
SCOLYMUS $x=10$					
<i>hispanicus</i> Span. Oyster Pl.	20	Stebbins <i>et al.</i> 1953	R		Medit.
<i>maculatus</i>	20	" "	—		"

TRIBE II: HELIANTHEAE

HOLOCARPHA $x=4, 6$					
<i>macradenia</i>	8	J. Clausen 1951	—		California
<i>virgata</i>	8	" "	—		"
<i>heermannii</i>	12	" "	—		"
<i>obconica</i>	12	" "	—		"
CALYCADENIA (HEMIZONIA) $x=4, 6, 7$					
<i>spicata</i>	8	J. Clausen <i>et al.</i> '34	—		California
<i>villosa</i>	12, 14	" "	—		"
MADIA $x=6, 7, 8, 9$					
$x=6$					
<i>bolanderi</i>	12	J. Clausen 1951	—		California
$x=7$					
<i>madioides</i>	14	" "	—		"
<i>glomerata</i>	28	" "	H		"
$x=8$					
<i>citriodora</i>	16	" "	—		"
<i>elegans</i> Tidy Tips	16	" "	H		"
<i>radiata</i>	16	" "	—		"
<i>rammii</i>	16	" "	—		"
<i>subspicata</i>	16	" "	—		"
<i>wheeleri</i>	16	" "	—		"
<i>yosemitana</i>	16	" "	—		"
<i>capitata</i>	32	" "	—		W: N. & S. Amer.

MADIA (cont.)

<i>chilensis</i>	32	J. Clausen 1951	—	Chile
<i>exigua</i>	32	" "	—	California
<i>gracilis</i>	32, 48	" "	—	"
<i>minima</i>	32	" "	—	"
<i>sativa</i>	32	" "	HO	"
<i>x = 9</i>				
<i>hallii</i>	18	" "	—	"
<i>nutans</i>	18	" "	—	"
<i>citigracilis</i>	48	" "	—	"
<i>(gracilis × citriodora)</i>				

LAYIA *x* = 7, 8

<i>x = 7</i>				
<i>chrysanthemoides</i>	14	J. Clausen 1951	H	California
<i>fremontii</i>	14	" "	—	"
<i>jonesii</i>	14	" "	—	"
<i>leucopappa</i>	14	" "	—	"
<i>munzii</i>	14	" "	—	"
<i>platyglossa</i>	14	" "	H	"
<i>x = 8</i>				
<i>carnosa</i>	16	" "	—	"
<i>gaillardoides</i>	16	" "	—	"
<i>glandulosa</i>	16	" "	H	W: N. America
<i>heterotricha</i>	16	" "	—	California
<i>hieracioides</i>	16	" "	—	"
<i>pentachaeta</i>	16	" "	—	"
<i>septentrionalis</i>	16	" "	—	"
<i>paniculata</i>	32	" "	—	"

HOLOZONIA (LAGOPHYLLA) *x* = 7

<i>filipes</i>	14	Johansen 1933b	—	California
----------------	----	----------------	---	------------

LAGOPHYLLA *x* = 7

<i>ramosissima</i> & 2 spp,	14	Johansen 1933b	—	W: N. America
-----------------------------	----	----------------	---	---------------

HEMIZONIA *x* = (7), 9–14

<i>x = 9</i>				
<i>kelloggii</i>	18	J. Clausen 1951	—	California
<i>pallida</i>	18	" "	—	"
<i>pungens</i>	18	" "	—	"
<i>x = 10</i>				
<i>angustifolia</i>	20	" "	—	"
<i>halliana</i>	20	" "	—	"
<i>x = 11</i>				
<i>lobbii</i>	22	" "	—	"
<i>mohavensis</i>	22	" "	—	"
<i>pentactis</i>	22	" "	—	"
<i>parryi</i>	22, 24	" "	—	"
<i>x = 12</i>				
<i>arida</i>	24	" "	—	"
<i>australis</i>	24	" "	—	"
<i>clementina</i>	24	" "	H	"
<i>fasciculata</i>	24	" "	H	"
<i>greeneana</i>	24	" "	—	"
<i>minthonnii</i>	24	" "	—	"

HEMIZONIA (cont.)				
<i>paniculata</i>	24	J. Clausen 1951	—	California
<i>ramosissima</i>	24	" "	—	"
<i>x = 13</i>				
<i>fitchii</i>	26	" "	—	"
<i>floribunda</i>	26	" "	—	"
<i>x = (7), 14</i>				
<i>calyculata</i>	28	" "	—	"
<i>clevelandii</i>	28	" "	—	"
<i>congesta</i>	28	" "	—	"
<i>lutescens</i>	28	" "	—	"
<i>luzulaefolia</i>	28	" "	—	"
<i>multicaulis</i>	28	" "	—	"
<i>tracyi</i>	28	" "	—	"
GALINSOGA <i>x = 8</i> (9)				
<i>parviflora</i>	{ 16	Covas & S. 1946	—	S. Amer. (Eur)
	{ 16	Haskell & M. 1952	—	" "
<i>ciliata</i>	32	" "	—	" "
<i>as quadriradiata</i>	36	Reese 1952a	—	" "
HELIOPSIS <i>x = 8</i>				
<i>helianthoides</i> (laevis)	32	Cooper & M. 1935	H	E: N. America
DAHLIA <i>x = 8, 18</i>				
<i>coccinea</i> Fire D.	32	Lawrence 1929	—	Mexico
<i>coronata</i>	32	" "	—	"
<i>imperialis</i>	32	" "	—	"
<i>maxonii</i>	32	" "	—	Mex., Guat.
<i>variabilis</i> Garden D.	64	" 1931a	HRV	cult
<i>merckii</i>	36	" 1931b	—	Mexico
THELESERMA <i>x = 9, 11</i>				
<i>burridgeanum</i> (hybridum)	18	Bilquez, D. 1951	H	Texas
<i>megapotamicum</i>	22	Schnack & C. 1947	—	Temp. S. Amer.
PARTHENIUM <i>x = (9) 18</i> (Apomixis)				
<i>incanum</i> Mariola	{ 36	Botschanzewa 1933	—	W: N. America
	{ 54, 72, 90	Stebbins & K. 1944	—	"
<i>argentatum</i> Mex. Rubber	{ 36 + 0-2B	" "	—	"
Guayule	{ 54, 72	" "	—	"
	+ 0-2B	Catcheside 1950	Ru	Texas, Mexico
	108-111			
XANTHIUM * <i>x = (9) 18</i>				
<i>cavanillesii</i>	36	Covas & S. 1946	—	N. & S. Amer.
<i>italicum</i> & 2 spp.	36	Symons 1926	M	China, Japan
<i>strumarium</i> Bur Weed	36	M. Ishikawa 1916	MO	Cosmop.
<i>spinosum</i>	{ 36	Covas & S. 1946	—	"
	{ 36	Heiser & W. 1948	—	"
ECHINACEA (RUDBECKIA) <i>x = 11</i>				
<i>purpurea</i> Purple Cone-flower	22	Battaglia 1947a	H	S: U.S.A.
ECLIPTA <i>x = 11</i>				
<i>erecta</i>	22	Singh 1951	—	Cosmop. Trop.

HETEROSPERMUM $x = 11$					
<i>xanthii</i>	22	Gelin 1934	—	California	
LEPTOSYNE (COREOPSIS) $x = 12$					
<i>bigelowii</i>	24	Gelin 1934	H	California	
<i>maritima</i> Sea Dahlia	24	„ „	H	„	
ZINNIA $x = 12$					
<i>elegans</i>	24	Ishikawa 1916	H	Mexico	
<i>pauciflora</i>	24	Schnack & C. 1947	H	Mex., S. Amer.	
COSMOS (BIDENS) $x = 12$					
<i>bipinnatus</i>	24	Sugiura 1936b	H	Mexico	
<i>diversifolius (dahlioides)</i>	24	Gelin 1934	H	„	
<i>sulphureus</i>	24	Sugiura 1936b	H	„	
<i>atrosanguineus</i>	48	Lawrence 1929	H	„	
BIDENS $x = 12$					
<i>andicola</i>	24	Covas & S. 1946	—	Ecuador	
<i>cernua</i> Bur Marigold	24	Lewitzky, T. 1937	—	N. Temp.	
<i>ferulaefolia</i>	24	Gelin 1934	H	Mexico	
<i>chinensis (pilosa)</i>	48	„ „	H	S. America	
<i>heterophylla</i>	48	„ „	—	W: N. Amer., Mexico	
<i>radiata</i>	48	Hagerup 1944	—	Eur., Siberia	
<i>subalternans</i>	48	Covas & S. 1946	—	W. I., S. Amer.	
<i>tripartita</i>	48	Lewitzky, T. 1937	—	Eur., Siberia	
<i>pilosa (leucantha)</i>	72	Gelin 1934, Covas & S. 1946	H	W. I., S. Amer.	
COREOPSIS $x = 12, 13, 14$					
<i>auriculata</i>	24	Bilquez, D. 1951	H	S: U.S.A.	
<i>tinctoria (bicolor)</i>	24	Gelin 1934	H	C: U.S.A.	
<i>lanceolata</i>	24, 48	Bilquez, D. 1951	H	E: U.S.A.	
<i>cardaminifolia</i>	{ 24	„ „	H	S: U.S.A.	
	26	Gelin 1934			
<i>drummondii (picta)</i>	26	„ „	H	Texas	
<i>grandiflora (floribunda)</i>	26	„ „	H	S: U.S.A.	
<i>tripteris</i>	26	„ „	—	U.S.A.	
<i>pubescens</i>	28	Snoad 1952	H	S: U.S.A.	
AMBROSIA $x = 12, 17, 18$					
<i>trifida</i> Ragweed	24	Cooper & M. 1935	—	N. America	
<i>bidentata</i>	34	K. L. Jones 1943	—	„	
<i>artemisifolia (elatiar)</i>	36	„ „	—	„	
<i>trifida × elatiar</i>	30	„ „	—	expt.	
<i>psilostachya</i>	100-104	Heiser & W. 1948	—	N. America	
SPILANTHES $x = 13$					
<i>decumbens</i>	26	Covas & S. 1947	—	S. America	
HIDALGOA $x = 15$					
<i>werklei</i> Climbing Dahlia	30	Lawrence 1931b	H	Costa Rica	
GUIZOTIA $x = 15$					
<i>abyssinica</i> Nigerseed	30	Richharia & K. '38	O	Trop. Africa	

RUDBECKIA $x = 16, 19$ (Apomixis)

<i>amplexicaulis</i>	32	Battaglia 1947a	H	C. & S. U.S.A.
<i>bicolor</i>	38	" "	H	S: U.S.A.
<i>hirta</i>	Black-eyed Susan 38	" 1947b	H	Canada, U.S.A.
<i>laciniata</i>	Cone Flower 38, 76	" 1947a	H	E: N. America
<i>speciosa</i>	76	" "	H	" "

TITHONIA $x = 17$

<i>rotundifolia</i>	34	Heiser 1948	H	Mex., C. Amer.
<i>tagetifolia</i>	34	Bilquez, D. 1951	H	Mexico

VERBESINA $x = 17$

<i>encelioides</i>	34	Covas & S. 1946	H	Fla.—Mex.
<i>subcordata</i>	34	Schnack & C. 1947	—	Brazil

HELIANTHUS $x = 17$

<i>grosse-serratus</i>	Sawtooth S.	32	Cooper & M. 1932	H	E: U.S.A.
<i>annuus</i>	Sunflower	34	Geisler 1931	HO	<i>cult</i> (N. Amer.)
		(68)	Rybin 1939		
<i>bolanderi</i>		34	Heiser & W. 1948	—	California
<i>giganteus</i>	Giant S.	34	Geisler 1931	HO	Can., C: U.S.A.
<i>maximiliani</i>		34	" "	H	C: U.S.A.
<i>microcephalus</i>		34	" "	H	N. America
<i>occidentalis</i>		34	" "	H	C: U.S.A.
<i>salicifolius</i> (<i>orygalis</i>)		34	" "	H	"
<i>argophyllus</i>		34	Heiser 1948	H	Texas
<i>jaegeri</i>		34	" "	—	California
<i>petiolaris</i>	Prairie S.	34	" "	H	W: N. America
<i>ruderalis</i>	Wild S.	34	Klimochkina 1940	—	N. America
<i>strumosus</i>	Woodland S.	102	Wagner 1932	H	"
<i>rigidus</i>		102	" "	H	W: N. America
<i>tuberosus</i>	Jerusalem Art.	102	" "	R	E: N. America
<i>tub. × annuus</i>		68	Shchibra 1936	—	<i>expt</i>

BALSAMORRHIZA $x = 19$

<i>careyana</i>		38	Weber 1946	—	W: N. America
<i>hookeri</i>	Balsam Root	38	" "	HR	"
<i>incana</i>		38	" "	R	"
<i>rosea</i>		38	" "	—	"
<i>sagittata</i>	Oregon S.	38	" "	GHR	"
<i>serrata</i>		38	" "	—	"

WYETHIA $x = 19$

<i>amplexicaulis</i>		38	Weber 1946	H	W: N. America
<i>angustifolia</i>		38	" "	H	"
<i>helenioides</i>		38	" "	—	"
<i>mollis</i>		38	" "	—	"

TRIBE III: ASTEREAE

ASTRANTHIUM (BELLIS) $x = 4$

<i>integrifolium</i>	8	Baldwin 1941b	H	N. America.
----------------------	---	---------------	---	-------------

ASTER * $x = 5, 8, 9$

<i>amethystinus</i>	10	Wetmore & D. 1939	H	E: U.S.A.
<i>amplexicaulis</i>	10	" "	"	"
<i>multiflorus</i>	10	Delisle 1937	H	N. America

ASTER (cont.)

<i>novae-angliae</i>		10	Delisle 1937	H	N. America
<i>sericeus</i>		10	Annen 1945	H	"
<i>subulatus</i>		10	Wetmore & D. 1939	—	"
<i>squamatus</i>		20	Schnack & C. 1947	—	S. America
<i>x = 8</i>					
<i>adscendens</i>		16, 32	J. Clausen <i>et al.</i> 1940	—	N. America
<i>x = 9</i>					
<i>alpinus</i>		18	Sakai 1935	H	North Reg.
<i>anomalus</i>		18	Avers 1953	—	E: N. Amer.
<i>fastigiatus</i>		18	Tahara & S. 1926	—	Siberia
<i>glehnii</i>	& 8 spp.	18	Shimotomai & H. '42	H	Japan
<i>montevicensis</i>		18	Schnack & C. 1947	—	Brazil, Arg.
<i>scaber</i>		18	Shimotomai & H. '42	H	Japan
<i>texanus</i>		18	Avers 1953	—	E: N. Amer.
<i>tripolium</i>	Sea Aster	18	Shimotomai & H. '42	—	Eur., N. Afr., N. Asia
<i>ageratoides</i>		18, 19, 36	" "	—	Himalayas
<i>cordifolius</i>		18, 36	Avers 1953	H	E: N. Amer.
<i>sagittifolius</i>		18, 36	" "	H	"
<i>shortii</i>		18, 36	" "	H	"
<i>amellus</i>		18	Annen 1945	H	Eur., Asia
garden forms		66, 76	" "	H	<i>cult</i>
<i>thomsonii</i>	(3x)	27	" "	H	Himalayas
<i>alpinus</i>	Rock Aster	36	S. & S. 1933	H	Alps—Altai
<i>altaicus</i>	& 2 spp.	36	Shimotomai & H. '42	H	Persia—N. Asia
<i>drummondii</i>		36	Avers 1953	H	E: N. Amer.
<i>lowrieanus</i>		36	" "	H	"
<i>trinervius</i>		36	Tahara & S. 1926	H	Himalayas
<i>undulatus</i>		36	Avers 1953	H	E: N. Amer.
<i>frikartii</i>		52, 54	Annen 1945	H	<i>cult</i>
<i>flaccidus</i>		54	S. & S. 1938	—	Altai
<i>laevis</i>	Michaelmas D.	54	Revell 1945*	H	E: U.S.A.
<i>tataricus</i>		54	Shimotomai & H. '42	H	Sib., China
<i>ciliolatus</i>		72	Avers 1953	—	N: N. Amer.

GRINDELIA *x = 6*

<i>chiloensis</i>		12	Covas & S. 1946	H	Argentine
<i>pulchella</i>		12	" "	—	Chile
sp. aff. <i>chiloensis</i>		24	Schanck & C. 1947	—	Argentine
<i>camporum</i>		24	Heiser & W. 1948	—	N. America

FELICIA *x = 6, 8, 9*

<i>bergeriana</i>		12	Bilquez, D. 1951	H	S. Africa
<i>amelloides</i>	Blue Daisy	16	Sugiura 1936b	H	"
<i>tenella</i> (<i>fragilis</i>)		16	Harling 1951b	H	"
<i>adfinis</i>		18	Bilquez, D. 1951	H	"

BACCHARIS *x = 9*

<i>genistelloides</i>		18	Bowden 1945a	H	Peru, Brazil
<i>genistifolia</i>		18	" "	—	Brazil
<i>halimifolia</i>	Groundsel Bush	18	" "	H	E: U.S.A.
<i>phyteumoides</i>		18	" "	—	Brazil
<i>pingraea</i>		{ 18	" "	—	Chile
		{ 18	Covas & S. 1946	—	
<i>lanceolata</i>		18	" "	—	Peru

BELLIUM $x=9$				
<i>bellidioides</i>	18	Negodi 1935	H	Medit.
BOLTONIA (ASTEROMOEAE) $x=9$				
<i>indica</i>	18	Tahara & S. 1926	H	Japan
CALLISTEPHUS $x=9$				
<i>sinensis</i> China Aster	18	Tahara & S. 1926	H	Sib., China
GRANGEA $x=9$				
<i>maderaspatana</i>	18	Mitra 1947	—	Tr. Asia & Afr.
HETEROTHECA $x=9$				
<i>grandiflora</i>	18	Heiser & W. 1948	—	W: N. Amer.
LINOSYRIS (ASTER) $x=9$				
<i>vulgaris</i> (<i>A. linosyris</i>)	18	Annen 1945	H	Europe
PSEUDOBACCHARIS $x=9$				
<i>retamoides</i>	18	Schnack & C. 1947	—	Argentine
BELLIS $x=9$				
<i>annua</i>	18	Negodi 1935	—	N.W. Medit.
<i>perennis</i> Daisy	18	" "	H	Europe
<i>sylvestris</i>	36, 54	" T. 1937	—	Medit.
ERIGERON $x=9, 16$ (Polyploids Apomictic)				
<i>acris</i>	18	L. & L. 1942	—	N. Temp.
<i>alpinus</i>	18	Chiarugi 1927b	H	Alpine & Arctic
<i>aurantiacus</i> Orange Daisy	18	Bergman 1942	H	Turkestan
	18	Harling 1951b	H	
<i>aureus</i>	18	" "	H	W: N. Amer.
<i>borealis</i>	18	Chiarugi 1927b	—	Europe
<i>canadensis</i> Fleabane	18	Okabe '34, Harling 1951b	H	Cosmop.
<i>frigidus</i>	18	Harling 1951b	H	Sierra Nevada
<i>glabellus</i>	18	" "	H	N. America
<i>polymorphus</i>	18	Reese 1953	—	North & Arctic
<i>uniflorus</i>	18	Bøcher & L. 1950	H	Arctic
<i>pulchellus</i>	18	Harling 1951b	H	Caucasus
<i>macranthus</i>	18	Bergman 1942	H	Rocky Mtns.
	26?	Holmgren 1919		
<i>glabratus</i>	18	Sakai 1934	—	Switzerland
<i>annuus</i>	36	M. & S. 1935	—	
	27	Okabe 1934	—	N. America
<i>karvinskianus</i>	32	Battaglia 1950a	H	Mex., C. Amer.
	36	Fagerlind 1947		
<i>unalaschkense</i>	36	Flovik 1940	—	Arctic
<i>bonariensis</i>	54	Holmgren 1919	—	S. America
<i>compositus</i>	54, 63	Bøcher & L. 1950	H	W: N. Amer.
GYMNASTER $x=9$				
<i>pygmaeus</i>	18	Shimotomai & H. '42	—	Japan
<i>savatieri</i>	18, 36	Inoue 1952	—	"
<i>koraiensis</i>	144	Shimotomai & H. '42	—	Korea

KALIMERIS $x = 9$

<i>miqueliana</i>	18	Shimotomai & H. '42	—	Japan
<i>pinnatifida</i>	18, 63, 64, 66	" "	—	"
<i>indica</i>	54	" "	—	"
<i>incisa</i>	72	Shimotomai & I. '51	H	Siberia
<i>yomena</i>	63 \pm 9	" "	H	cult

SOLIDAGO $x = 9$

<i>canadensis</i>	18	Brock unp.	H	E: N. America
<i>chilensis</i>	18	Covas & S. 1946	—	Argentina
<i>elongata</i>	18	Clausen <i>et al.</i> 1940	H	W: N. America
<i>multiradiata</i>	18	" "	—	" "
<i>rugosa</i>	18	Goodwin 1937	H	E: N. America
<i>virgaurea</i>	Golden Rod	18 Scheerer, L. & L. '42	H(Ru)	Europe
<i>sempervirens</i>	18, 36	Goodwin 1937	H	E: N. America

HETEROPAPPUS $x = (9), 18$

<i>arenarius</i>	36	Shimotomai & H. '42	—	Japan, Mongolia
<i>hispidus</i>	36	" "	—	" "
<i>leptocladus</i>	36	" "	—	" "

GUTIERREZIA $x = 12$

species	24	Covas & S. 1947	—	S. America
---------	----	-----------------	---	------------

TRIBE IV: INULEAE

ODONTOSPERMUM (ASTERISCUS) $x = 5$

<i>spinosum</i>	10	Tongiorgi 1935	—	Medit.
-----------------	----	----------------	---	--------

BUPHTHALMUM (TELEKIA) $x = 5$

<i>grandiflorum</i> Ox-eye	20	Sakai 1935	H	S. Europe
<i>salicifolium</i>	20	Tongiorgi 1935	—	"
<i>speciosum</i>	20	" "	—	S. Eur., W. Asia

TESSARIA $x = 5$

<i>absinthoides</i>	20	Covas & S. 1946	—	Chile
---------------------	----	-----------------	---	-------

PLUCHEA $x = 5$

<i>camphorata</i> Stinkweed	20	Baldwin & S. 1955a	—	S. & E: U.S.A., W.I.
<i>foetida</i> Stinking Fleabane	20	" "	—	" "
<i>purpurascens</i>	20	" "	—	S: "U.S.A.", Trop. Amer.

PULICARIA (INULA) $x = 5, 9$

<i>vulgaris</i>	18	Wulff 1937b	—	Temp.
<i>crispa</i>	20	Singh 1951	—	N. & Trop. Afr., Arabia, India
<i>dysenterica</i> Fleabane	20	Rodolico 1933	—	Medit.

INULA $x = 5, 8, 9$

<i>cordata</i>	16	Tongiorgi 1935	—	Asia Minor
<i>ensifolia</i> (bubonium)	16	Reese 1953	H	Eur., N. Asia
<i>grandiflora</i>	16	S. & S. 1940	H	Cauc., Himal.
<i>hirta</i>	16	Tongiorgi 1942	H	S. Europe
<i>orientalis</i> (glandulosa)	16	" "	H	Caucasus
<i>thapsoides</i>	16	" "	H	Cauc., N. Persia

INULA (cont.)

<i>britannica</i>		{ 16, 24	Okabe 1937	H	Eur., Asia
<i>conyza</i>	Ploughman's Spikenard	32	Pólya, L. & L. 1948	—	Eur., W. Asia
<i>crithmoides</i>	Golden Samphire	18	Castro & F. 1946	—	" "
<i>indica</i>		18	Singh 1951	—	India
<i>viscosa</i>		18	Rodolico 1933	—	S. Europe
<i>helenium</i>	Elecampane	20	Rutland 1941	MV	N. Temp.
<i>hookeri</i>		20	Tongiorgi 1942	H	Himalayas
<i>racemosa</i>		20	" 1935	H	Himal., W. China

GNAPHALIUM $x = 7$

<i>luteo-album</i>	Jersey Cudweed	14	Wulff 1937b	—	Cosmop.
<i>uliginosum</i>		14	" "	—	S. Eur., W. Asia
<i>supinum</i>		28	Rutland 1941	—	N. Temp. & Arct.
<i>norvegicum</i>		56	L. & L. 1944b	—	" "
<i>sylvaticum</i>		c. 58	S. & S. 1938	H	Eur., Cauc., N. America

HELICHRYSUM $x = 7$

<i>arenarium</i>		{ 14	Tongiorgi 1935	—	Eur., Cauc.
<i>bracteatum</i>	Strawflower	28	Scheerer 1939	—	
<i>serotinum</i>		28	Tongiorgi 1942	H	Australia
<i>stoechas</i>		28	Lorenzo-A. & G. '50	—	Europe
<i>thianschanicum</i>		28	" " "	—	W. Medit.
		28	Tongiorgi 1935	H	W. China

ANAPHALIS $x = 7$

<i>margaritacea</i>	Pearly Everlasting	28	Maude 1939	H	N. America
---------------------	--------------------	----	------------	---	------------

FILAGO $x = 7$

<i>arvensis</i>		28	Wulff 1937b	—	Eur., N. Asia
<i>germanica</i>	Cudweed	28	" "	—	Eur., S.W. Asia
<i>minima</i>		28	Reese 1952a	—	Eur., Siberia
<i>spathulata</i>		28	Hagerup 1941b	—	Eur., N. Afr., S.W. Asia

ANTENNARIA $x = 7$ (Apomictic)

<i>dioica</i>	Cat's Ear	28, 34	Bergman 1944	H	Eur., N. Asia, N. America
<i>neglecta</i>		28	Stebbins 1932	—	N. America
<i>plantaginifolia</i>		28	" "	—	"
<i>solitaria</i>		28	" "	—	"
<i>brainerdii</i>		42	" "	—	"
<i>carpathica</i>		40, 42	Bergman 1935b	—	N. Temp.
<i>magellanica</i>		56	" 1937	—	Magellan
<i>neodioica</i>		c. 52	Stebbins 1932	—	N. America
<i>glabrata</i>		63	Bøcher & L. 1950	—	"
<i>alpina (intermedia)</i>		84	Bergman 1935b	H	N. Temp.
<i>canadensis</i>		c. 84	Stebbins 1932	—	N. America
<i>fallax</i>		84	" "	—	"
<i>parlinii</i>		84	" "	—	"

HELIPTERUM $x = 7, 11$

<i>roseum</i>	14	Bilquez, D. 1951	H	Australia
<i>manglesii</i>	22	" "	H	"

LEONTOPODIUM $x = 7? 13$

<i>alpinum</i> Edelweiss	26	Sakai 1935	H	Europe
<i>kurilense</i>	26	" 1934	H	Japan
<i>campestre</i>	49	S. & S. 1938	—	Siberia

AMMOBIUM $x = 13$

<i>alatum</i> Everlasting	26	Avanzi 1948	H	Australia
---------------------------	----	-------------	---	-----------

EVAX $x = 13$

<i>umbellata</i> (<i>pygmaea</i>)	26	Tongiorgi 1942	—	Medit.
-------------------------------------	----	----------------	---	--------

TRIBE V: CYNAREAE

XERANTHEMUM $x = 6, 10$

<i>annuum</i>	12	Poddubnaja 1931	H	Medit.
<i>squarrosum</i>	12	" "	—	"
<i>cylindraceum</i>	20	" "	—	"

CENTAUREA * $x = 7, 8, 9, 10, 11, 12, 13$

$x = 7, 8, 9$

<i>scabiosa</i>	{	14	Dark 1945 *	—	Europe
		20	Roy 1937		
		20 + 0-13B	Fröst 1948		
<i>iberica</i>		16	Poddubnaja 1931	—	Spain
<i>solstitialis</i> St. Barnaby's Th.		16	Heiser & W. 1948	—	S. & S.E. Eur., W. Asia
<i>diffusa</i>		18	Moore & F. 1954	—	Eurasia
<i>macrocephala</i>		18	Poddubnaja 1931	H	Armenia
<i>ossica</i>		18	" "	—	Caucasus
<i>ovina</i>		18	" "	—	Sib., Asia Minor
<i>maculosa</i>		36	Moore & F. 1954	—	Europe

$x = 10, 11, 12, 13$

<i>calcitrapa</i>		20	Vignoli 1945b	—	Eur., N. Afr., Temp. Asia
<i>macroacantha</i>		20	" "	—	Cauc., Asia Min.
<i>reflexa</i>		20	Poddubnaja 1931	—	Cauc., Armenia
<i>salonitana</i>		20	" "	—	E. Europe
<i>aspera</i>	{	20	Lorenzo-Andreu 1951	—	S. Europe
		22	Maude 1939		
<i>melitensis</i>		22	Covas & S. 1947	—	Eur., S. Amer.
<i>nervosa</i>		22	Favarger 1953	H	S. Eur. mtns.
<i>phrygia</i>		22	Poddubnaja 1931	—	Europe
<i>cyanus</i> Cornflower & 6 spp.		24	Fritsch 1935	H	Eur., Cauc.
<i>repens</i> Russ. Knapweed		26	Moore & F. 1954	—	Asia

$x =$ various

<i>ruthenica</i>		30	Poddubnaja 1931	H	Cauc., Siberia
<i>fischeri</i>		40	" "	—	Eur., S.W. Asia
<i>jacea</i> & 2 spp.		44	Roy 1937, Wulff '37b	—	Europe
<i>bella</i> & 2 spp.	c. 55		Poddubnaja 1931	—	Caucasus
<i>collina</i>		60	Roy 1937	—	Medit.

PHAEOPAPPUS $x = 8$

steveni 16 Poddubnaja 1931 — Caucasus

CARDUUS $x = 8, 11$

crispus 16 Poddubnaja 1931 — Europe
nutans Musk Thistle 16 " " — Eur., Temp. Asia
acanthoides 22 " " — Eur., Cauc.
defloratus 22 Reese 1952a — Europe

LEUZEIA $x = 9$

conferta 18 Lorenzo-Andreu & G. H. 1950 — Medit.

SAUSSUREA $x = 9, 13$

brachycephala 26 M. & S. 1935 — Japan
sagitta 26 " " — "
riederi 39 " " — Kamchatka
alpina (*affinis*) { 36? Ishikawa 1916 — N. Eurasia
 54 L. & L. 1944b —

CARLINA $x = 10$

acanthifolia 20 Arata 1944 H S. Eur., W. Asia
acaulis 20 " " H S. Europe
corymbosa 20 " " — Medit.
gummifera 20 " " — "
lanata 20 " " — "
vulgaris Carline Thistle 20 " " — Eur., N. Asia

CIRSIIUM (CNICUS)* $x = 10, 17$

$x = 10$ (New World)

discolor 20 Ownbey 1951b H E: N. America
muticum Swamp Thistle 20 " " H "

$x = 17$ (Old World)

acaule 34 Wulff 1937b — Europe
arvense 34 Ehrenberg 1945 — Temp. Eurasia
eriphorum 34 Reese 1952a — Eur., Asia Min.
heterophyllum 34 Wulff 1937b — Eur., N. Asia
oleraceum 34 " " — Europe
japonicum & 15 spp. 34 Aishima 1934 — Japan
palustre 34 Poddubnaja 1931 — Eur., N. Asia
vulgare (*lanceolatum*) 68 " " H Eurasia
nipponicum & 10 spp. 68 Aishima 1934 — Japan
alpicolum & 2 spp. 102 " " — "

CNICUS $x = 11$

benedictus Blessed Thistle 22 Vaarama 1947a HMsP Medit., Cauc.

STEVIA $x = 11$

rabaudiana Kaa He-e 22 EKJ SuV Paraguay

SERRATULA $x = 11, 15$

tinctoria 22 Maude 1940 — N. Eur., Asia
radiata Sawwort 60 Poddubnaja 1931 — Eur., Cauc.

ATRACTYLIS $x = 12$

lancea 24 Suzuka & K. 1949 — Japan
lyrata 24 " " — "
ovata 24 Suzuka 1950a " — "

CARTHAMUS $x = 8, 12$					
<i>oxyacantha</i>		24	Kishore 1951	—	Cauc., W. Asia
<i>tinctorius</i>	Safflower	24	Poddubnaja 1931	DO	O.W. Tropics
<i>lanatus</i>		64	„ „	O	Eur.—Persia
COUSINIA $x = 13$					
<i>carduiformis</i>		26	Poddubnaja 1931	—	Caucasus
CRUPINA $x = 14, 15$					
<i>crupinastrum</i>		28	Poddubnaja 1931	—	Medit.
<i>vulgaris</i>		30	„ „	H	„
JURINEA $x = 15$					
<i>cyanooides</i>		30	Poddubnaja 1931	—	S. Eur., Cauc.
AMBERBOA $x = 8$					
<i>moschata</i>		32	Poddubnaja 1931	—	S.W. Asia
ECHINOPS $x = 8$					
<i>sphaerocephalus</i>	Globe Thistle	32	Poddubnaja 1927	H	Med.—N. Asia
ARCTIUM $x = 16, 18$					
<i>minus</i>	Lesser Burdock	32	Wulff 1937b	—	Europe
<i>lappa</i>	Great B., Gobo (Japanese)	32	Sugiura 1936	M	„
		36	Nakajima 1936	R	Japan
<i>tomentosum</i>		36	Poddubnaja 1931	—	Europe
<i>vulgare</i>	Wood B.	36	L. & L. 1944b	—	„
CYNARA $x = 17$					
<i>cardunculus</i>	Cardoon	34	Covas & S. 1947	V	Medit.
<i>scolymus</i>	Globe Artichoke	34	E.K.J.	V	„
ONOPORDUM $x = 17$					
<i>acanthium</i>	Scotch Th.	34	Poddubnaja 1931	—	Eur., W. Asia
SILYBUM (CARDUUS) $x = 17$					
<i>marianum</i>	St. Mary's Th.	34	Heiser & W. 1948	H	Europe

TRIBE VI: SENECTIONEAE

EMILIA (CACALIA) $x = 5$					
<i>sagittata</i>	Flora's Paintbrush	{ 10	Afzelius 1924		
		10	Baldwin & S. 1948b	H	India
<i>sonchifolia</i>		10	Baldwin 1946a	H	Tr. Afr. & Asia
<i>coccinea</i>		20	„ „	H	Trop. O.W.
sp.		20	Baldwin & S. 1949b	—	W. Africa
SENECIO (CINERARIA)* $x = 5, 9, 11, 12, 23$					
$x = 5$					
<i>discifolius</i>		10	Afzelius 1924	—	Trop. Africa
<i>elegans</i>	Purple Ragwort	20	„ „	H	S. Africa
<i>isatideus</i>		20	Goldsmith & K. '48	—	„
<i>pendulus</i>		20	Okabe 1931	—	Arabia
<i>scandens</i>		20	Afzelius 1924	H	China, Japan
<i>squalidus</i>	Oxford R.	20	„ „	—	Sicily, S. Italy
7 species		20	„ „ 1949		
<i>tomentosus</i>		20	Snoad unp.	H	S. Africa

SENECIO (*cont.*)

<i>abrotanifolius</i>		40	Afzelius 1924	H	C. Europe
<i>adonidifolius</i>		40	" "	H	S. France, Spain
<i>chordifolius</i>		40	" "	H	S. Africa
<i>cineraria</i>	Dusty Miller	40	" "	H	Medit.
<i>doria</i>		40	" "	H	S. & C. Europe
<i>filaginoides</i>		40	Covas & S. 1947	—	Chile
<i>gillesianus</i>		40	" 1946	—	"
<i>hualtata</i>		40	Schnack & C. 1947	—	"
<i>incanus</i>		40	Favarger 1949b	H	Eur. Alps
<i>jacobaea</i>	Tansy Ragwort	40	Afzelius 1924	—	Europe
<i>nemorensis</i>		40	M. & S. 1935	—	Eur., N. Asia
<i>viscosus</i>		40	Afzelius 1924	—	Eur., Asia M.
<i>vulgaris</i>	Groundsel	40	" "	—	Cosmo.
23 species		40	" " 1949		
<i>echinatus</i>		60	" 1949	—	Canaries
<i>heritieri</i>		60	" 1924	H	"
<i>oxyriifolius</i>		60	" 1949	—	S. Africa
<i>petasites</i>	Calif. Geranium	60	" 1924	H	Mexico
<i>webbii</i>		60	" 1949	—	Canaries
<i>soongaricus</i>		60	" "	—	C. & W. Asia
<i>doronicum</i>	Leopard's Bane	80	" "	H	C. & S. Europe
<i>uspallatensis</i>	c. 80		Schnack & C. 1947	—	Chile
<i>roberti-friesii</i>	c. 180		Afzelius 1924	—	cult
<i>x</i> = 9, 11, 12					
<i>arenarius</i>		18	Afzelius 1949	—	Cape Prov.
<i>cladobotrys</i>		24	S. & S. 1940	—	Caucasus
<i>palmatius</i>		{ 36	Suzuka & K. 1949	—	C. & E. Asia
		{ 80	Afzelius 1949	—	
<i>congestus (palustris)</i>		48	" 1924	—	Eur., N. Asia
<i>caucasica</i>		44	S. & S. 1940	—	Caucasus
<i>resedifolius</i>		46	" 1938	—	Siberia
		46	" 1938	—	
<i>integrifolius (campestris)</i>		{ 48, 90	" 1941	—	N. Temp.
		{ 48	Rutland 1941	—	
<i>spathulifolius</i>		48, 50	Afzelius 1949	—	W. Europe
<i>alpestris</i>		48, 50	" "	—	Europe

NOTONIA *x* = 10

<i>grandiflora</i>		20	Ganesan 1939	H	India
--------------------	--	----	--------------	---	-------

GYNURA (CRASSOCEPHALUM) *x* = 10

<i>aurantiaca</i>	Velvet Tree	20	Afzelius 1924	H	Java
<i>rubens</i>		20	" "	—	Trop. Africa
<i>crepidioides</i>		40	" "	—	"

KLEINIA *x* = 10

<i>articulata</i>	Candle Plant	20	Afzelius 1949	H	S. Africa
<i>cylindrica</i>		20	" "	H	"
		c. 100	" "		cult

OTHONNA *x* = 10

<i>carnosa</i>		20	Afzelius 1924	H	S. Africa
<i>coronopifolia</i>		20	" 1949	—	Cape Prov.

ERECHTITES $x = 10$				
<i>hieracifolia</i>	40	G. O. Cooper 1936	—	N. & S. Amer.
CACALIA $x = 10, 26$				
<i>suaveolens</i>	40	Afzelius 1924	—	N. America
<i>reniformis</i>	50	" "	—	"
<i>aconitifolia</i>	52	" 1949	—	China
<i>hastata</i>	60	" "	—	Eurasia
<i>roborowskii</i>	60	" "	—	China
MALLOTOPUS $x = 9$				
<i>japonicus</i>	18	M. & S. 1935	—	Japan
TRIDAX $x = 9$				
<i>trilobata</i>	18	Hjelmqvist 1951	H	Mexico
<i>procumbens</i>	36	Raghavan & V. '41b	—	Trop. America
LIGULARIA $x = 24, 29, 30$				
<i>altaica</i>	48	S. & S. 1938	—	Altai
<i>hodgsonii</i>	58	Afzelius 1949	—	China
<i>macrophylla</i>	58	" 1924	H	Caucasus
<i>clivorum</i> & 6 spp.	60	" 1924, 1949	H	China, Japan
<i>tussilaginea (kaempferi)</i>	60	Battaglia 1940	H	Japan
PETASITES (TUSSILAGO) $x = 26, 29, 30$				
<i>fragrans</i> Winter Heliotrope	52	Maude 1940	H	W. Medit.
<i>hybridus</i> Butterbur	60	Langlet 1936	HM	Eurasia
<i>albus</i>	60	Scheerer 1939	—	"
<i>frigidus</i>	60	Flovik 1940	—	Arct., Temp.
<i>niveus</i>	60	Langlet 1936	—	Europe
<i>spurius</i>	60	" "	—	"
<i>japonicus</i>	87	Yamamoto, K. 1931	HV	Sakhalin
TUSSILAGO (PETASITES) $x = 30$				
<i>farfara</i> Coltsfoot	60	Hagerup 1941b	M	Eurasia, N. Afr.
<i>japonica</i>	60	Langlet 1936	—	Japan
DORONICUM $x = 30$				
<i>austriacum</i>	60	Wcisło 1951	—	Europe
<i>cordatum</i>	60	Lindqvist 1950	—	"
<i>grandiflorum</i>	60	Favarger 1949b	—	"
<i>pardalianches</i>	60	Lindqvist 1950	H	"
<i>clusii</i>	120	Wcisło 1951	—	C. Eur. mtns.
<i>plantagineum</i>	c. 120	Lindqvist 1950	H	Europe
ARNICA $x = ?$ (Apomixis)				
<i>montana</i>	38	Favarger 1953	M	Eurasia
<i>unalaschensis</i>	c. 40	Sakai 1934	H	Unalaska
<i>alpina</i>	{ 56	L. & L. 1948		
	{ 60	Afzelius 1924	H	N. Reg.
	{ 76	Bøcher & L. 1950		
HOMOZYNE $x = ?$				
<i>alpina</i> Alpine Coltsfoot	c. 135	Langlet 1936	H	Europe
TRIBE VII: HELENIEAE				
BLENNOSPERMA $x = 7, 9$				
<i>californicum</i>	14	Heiser 1947	—	California
<i>bakeri</i>	18	" "	—	"

SCHKUHRIA $x = 10, 11$

<i>pinnata</i>	20	Covas & S. 1946	—	Argentina
<i>multiflora</i>	22	Schnack & C. 1947	—	"

HYMENOXYIS * $x = 11, 15$

<i>odorata</i>	22	Speese & B. 1952	—	S.W. U.S.A.
<i>argentea</i> & 11 spp.	30	" "	—	"
<i>acaulis</i>	30, 60	" "	—	"

TAGETES $x = 12$

<i>erecta</i> Afr. Marigold	24 (48)	Eyster 1939	H	Mexico
<i>biflora</i>	48	Covas & S. 1946	—	C. America
<i>mendocina</i>	48	Schnack & C. 1947	—	"
<i>patula</i> French M.	48 (96)	Eyster 1939	H	Mexico
<i>signata</i> (<i>erecta</i> \times <i>patula</i>)	36 (72)	" "	H	<i>cult</i>

HELENIUM $x = 14, 17$

<i>curtisii</i>	28	Baldwin & S. 1952	—	N. America
<i>autumnale</i> Sneezeweed	34	E.K.J.*	H	E: N. America

THYMOPHYLLA $x = 16$

<i>belenidium</i>	32	Covas & S. 1946	—	C. America
-------------------	----	-----------------	---	------------

FLAVERIA $x = 18$

<i>bidenis</i>	36	Covas & S. 1946	—	S. America
----------------	----	-----------------	---	------------

GAILLARDIA $x = 18$

<i>aristata</i> (<i>grandiflora</i>)	{ 36 72	Cooper & M. 1935 Atwood 1937	H	C: U.S.A.
<i>pulchella</i>	{ 36 34 (68)	Morinaga <i>et al.</i> '29 Schnack 1940	H	S: U.S.A.

TRIBE VIII: ARCTOTIDEAE

GAZANIA $x = 5$

<i>rigens</i>	10	La Cour 1945 *	H	S. Africa
---------------	----	----------------	---	-----------

BERKHEYA $x = 7$

<i>adlamii</i>	14	Gelin 1936	H	S. Africa
<i>bergiana</i>	14	" "	—	Rhodesia

URSINIA (SPHENOGYNE) $x = 8$

<i>anethoides</i>	16	Sugiura 1936b	H	S. Africa
<i>anthemoides</i>	16	" "	H	"
<i>speciosa</i>	16	" "	H	"

ARCTOTIS $x = 9$

<i>acaulis</i>	18	Bilquez, D. 1951	H	S. Africa
<i>as scapigera</i>	18	" "	H	
<i>stoechadifolia</i> Afr. Daisy	18	" "	H	"
var. <i>grandis</i>	18	" "		

VENIDIUM $x = 9$

<i>decurrens</i> v. <i>calendulaceum</i>	{ 18 18	Bilquez, D. 1951 Morrison 1952	H	S. Africa
<i>fastuosum</i>	{ 18 18	Bilquez, D. 1951 " "	H	"
as <i>wyleyi</i>				

TRIBE IX: CALENDULEAE

CALENDULA $x = 7, 8, 9$

<i>aegyptiaca</i>	Egyptian M.	14	Negodi 1935	DH	Medit., Mesop.
<i>officinalis</i>	Pot Marigold	$\begin{cases} 28 \\ 32 \end{cases}$	$\begin{cases} \text{" 1936a} \\ \text{Weddle 1941} \end{cases}$	DH	S. Europe
<i>suffruticosa</i>	Shrubby M.	$\begin{cases} 28 \\ 32 \end{cases}$	$\begin{cases} \text{Negodi 1936a} \\ \text{Weddle 1941} \end{cases}$	H	E. Medit.
<i>arvensis</i>		36	Negodi 1936a	H	Eur., S.W. Asia

DIMORPHOTHECA $x = 9, 10$

<i>aurantiaca</i>	Cape Marigold	18	Harrison, T. 1937	H	S. Africa
<i>pluvialis</i>		18	Bilquez, D. 1951	H	"
<i>pseudoaurantiaca</i>		18	Harrison, T. 1937	H	"
<i>sinuata</i>		18	Bilquez, D. 1951	H	"
<i>ecklonis</i>		20	Harrison, T. 1937	H	"
<i>barberiae</i>		38-40	Pienaar unpub.	H	"

TRIBE X: ANTHEMIDEAE

ARTEMISIA * $x = 8, 9, x_2 = 17$

$x = 8$

<i>mongolica</i>		16	Suzuka 1950b	—	E. Asia
3 species		16	" " 1951		
<i>campestris</i>	Sagewort	$\begin{cases} 16 \\ 18 \\ 36 \\ 36 \end{cases}$	$\begin{cases} \text{" " " } \\ \text{Weinedel 1928} \\ \text{Erlandsson 1939} \\ \text{Clausen et al. 1940b} \end{cases}$	M	N. Hemisphere

$x = 9$

<i>absinthium</i>	Wormwood	18	Weinedel 1928	DIP	Temp. Eurasia
<i>annua</i>	Sweet W.	18	Suzuka 1950b	H	S.W. & N. Asia
<i>arborescens</i>		18	Martinoli 1943	H	Medit.
<i>cina</i>	Levant W.	18	Weinedel 1928	IM	S.W. Asia
<i>dracunculus</i>	Tarragon	18	" "	Sp	S. Europe
<i>lactiflora</i>	White Mugwort	18	Suzuka 1950b	H	China
<i>pontica</i>	Roman W.	18	Weinedel 1928	H	C. Europe
<i>stelleriana</i>	Beach M.	18	Suzuka 1950b	H	N.E. Asia, N. Am.
<i>vulgaris</i>	Mugwort	18	Weinedel 1928	DI	N. Temp.
<i>palmeri</i> & 2 spp.		18	Ward 1953	—	California
14 species		$\begin{cases} 18 \\ 18 \end{cases}$	$\begin{cases} \text{Suzuka 1950b, 1951} \\ \text{Clausen et al. '40a, b} \\ \text{Nygren, L. & L. '48} \\ \text{Favarger 1953} \end{cases}$		
<i>borealis</i>		18, 36	Erlandsson 1939	—	N. & Arctic
<i>tridentata</i>	Sagebrush & 4 spp.	$\begin{cases} 18, 36 \\ 18, 36 \end{cases}$	$\begin{cases} \text{Ward 1953} \end{cases}$	HM	W: N. Amer.
<i>maritima</i>	Santonin	$\begin{cases} 18 \\ 18 \\ 54 \end{cases}$	$\begin{cases} \text{Weinedel 1928} \\ \text{Pólya 1948} \\ \text{Suzuka & K. 1949} \end{cases}$	DI	Eur., C. Asia
<i>nitida</i>		27	Chiarugi 1926	Fo	Italy
<i>japonica</i>		36	Suzuka 1950b	—	Japan
11 species		36	" " '51 Clausen et al. 1940b		
<i>ludoviciana</i>		36, c. 54	" " '40a	HM	N. America
<i>koidzumii</i>		$\begin{cases} 36 \\ 54 \end{cases}$	$\begin{cases} \text{Suzuka 1951} \\ \text{" 1950b} \end{cases}$		

ARTEMISIA (cont.)

<i>douglasiana</i>	54	Clausen <i>et al.</i> '40a	HM	N. America
<i>verlotorum</i>	54	Vignoli 1945a	—	N. Temp.
<i>montana</i>	51-54	Shimotomai 1947	—	Arctic
<i>iwayomogi</i>	52-54	Suzuka 1950b	—	Japan
<i>rothrockii</i>	{ c. 72 36, 54	{ Clausen <i>et al.</i> 1940a Ward 1953	H	W: N. America
$x_1 = 17$				
<i>dubia</i>	34	Suzuka 1950b	—	N. Temp.
<i>grenata</i>	34	„ 1951	—	China, Japan
<i>princeps</i>	34	„ 1950b	—	„ „

ANACYCLUS $x = 9$

<i>pyrethrum</i>	18	Raves 1926	H	S.E. Europe
<i>radiatus</i>	18	Harling 1950	H	Medit.

ANTHEMIS $x = 9$

<i>altissima</i>	18	Harling 1950	H	S. Europe
<i>arvensis</i>	18	„ „	—	Eur., N. Afr., Asia Minor
<i>austriaca</i>	18	„ „	H	Austria
<i>cotula</i> Stinking May-Weed	18	„ „	—	Eur., N. & W. As.
<i>cupaniana</i>	18	Dowrick 1952a	H	Italy
<i>maritima</i>	18	Harling 1950	—	Medit.
<i>montana (macedonica)</i>	18	Dowrick 1952a	H	Eur., Syria
<i>nobilis</i> Chamomile	18	Suzuka & K. 1949	HM	Europe
<i>rigescens</i>	18	Harling 1950	H	Caucasus
<i>rudolphiana</i>	18	S. & S. 1940	—	„
<i>ruthenica</i>	18	Harling 1950	H	C. Europe
<i>tinctoria</i> Yellow Ch.	18	„ „	DH	Eur.—Persia
<i>sancti-johannis</i>	18	Dowrick 1952a	H	Bulgaria

CENIA $x = 9$

<i>turbinata</i>	18	Negodi 1935	—	S. Africa
------------------	----	-------------	---	-----------

CLADANTHUS $x = 9$

<i>arabicus</i>	18	Harling 1950	H	S. Spain, Morocco
-----------------	----	--------------	---	-------------------

LASIOSPERMUM $x = 9$

<i>radiatum</i>	18	Harling 1950	H	S. Africa
-----------------	----	--------------	---	-----------

LONAS $x = 9$

<i>inodora</i> Afr. Daisy	18	Harling 1950	H	Medit.
---------------------------	----	--------------	---	--------

NANANTHERA $x = 9$

<i>perpusilla</i>	18	Martinoli 1940	—	Corsica
-------------------	----	----------------	---	---------

OTANTHUS (DIOTIS) $x = 9$

<i>maritimus</i> Cotton Weed	18	Martinoli 1939	H	Medit.
------------------------------	----	----------------	---	--------

SANTOLINA $x = 9$

<i>pinnata</i>	18	Martinoli 1939	H	Italy
----------------	----	----------------	---	-------

TANACETUM (CHRYSANTHEMUM) $x = 9$

<i>pseudachillea</i>	18	Dowrick 1952a	—	Turkestan
<i>vulgate</i> Tansy	18	Shimotomai 1937b	HMSp	Eur., N. Asia

MATRICARIA $x=9$

<i>ambigua</i>		18	Tahara 1921	—	Europe
<i>chamomilla</i>	Chamomile	18	L. & L. 1948	M	Medit.
<i>matricarioides (discoidea)</i>		18	Rutland 1941,		
		18	Suzuka 1950a	H	N.E. Asia
		18	Hüser 1930,		
<i>maritima</i>	Scentless May-	18	Hagerup 1941b,		
<i>(inodora)</i>	Weed	36	Vaarama 1950,	H	Eur., S.W. Asia
		36	Harling 1951a		

ACHILLEA* $x=9$

<i>asplenifolia</i>	& 2 spp.	18	Ehrendorfer 1952	—	Europe
<i>atrata</i>		18	Reese 1952a	H	C. Europe
<i>cartilaginea</i>		18	Lewitsky, T. 1937	—	Eur., S.W. Asia
<i>nana</i>		18	Favarger 1953	H	Alps
<i>ptarmica</i>	Sneezewort	18	Lewitzky, T. 1937	HMV	Eur., N. & W. As.
<i>macrophyllum</i>		18	Dowrick 1952a	—	N. Temp.
		18	Felfoldy 1947,		
<i>millefolium</i>	Yarrow	18	Harling 1950,	HM	Eur., W. Asia
		36, 54	Tureson 1938,		
		54	Ehrendorfer 1952		
<i>collina</i>		36	" "	—	Europe
<i>lanulosa</i>		36	Lawrence 1947	—	N. America
<i>borealis</i>		54	" "	—	W: N. America
<i>stricta</i>		54	Ehrendorfer 1952	—	Europe
<i>pannonica</i>		72	" "	—	"

CHRYSANTHEMUM $x=9$

<i>argenteum</i>		18	Dowrick 1952b	H	S.W. Asia, Cauc.
<i>boreale</i>		18	" "	—	China, Japan
<i>cassium</i>		18	" "	—	S.W. Asia, Cauc.
<i>catananche</i>		18	" "	H	Morocco
<i>cinerariaefolium</i>	Dalm. P.	18	" "	HIM	Dalmatia
<i>coccineum</i>	Pyrethrum	18	" "	HI	Cauc., Persia
<i>filifolium</i>		18	Shimotomai 1937b	—	Canaries
<i>foeniculaceum</i>		18	Harling 1951b	H	Teneriffe
<i>flosculosum</i>		18	Martinoli 1942	H	Medit.
<i>lavandulaefolium</i>		18	Shimotomai 1937b	I	Japan
<i>lineare</i>		18	" "	—	"
<i>macrophyllum</i>		18	Reese 1953	H	S.E. Eur., Cauc.
<i>macrotum</i>		18	Dowrick 1952b	—	Medit.
<i>makinoi (japonicum)</i>		18	Shimotomai & T. '36	H	Japan
<i>mawii</i>		18	Dowrick 1952b	H	Atlas
<i>millefoliatum</i>	18, 18 + iso.	18	" "	—	S.W. Russia
<i>myconis</i>		18	" "	H	C. & S. Europe
<i>nipponicum</i>		18	Shimotomai & T. '36	H	Japan
<i>nivellei</i>		18	Dowrick 1952b	—	Morocco
<i>parthenium</i>	Feverfew	18	" "	H	Eurasia
		18	Harling 1951a		
<i>rotundifolium</i>		18	Shimotomai 1937b	H	Hungary
<i>rupestre</i>		18	Sugiura 1937a	—	Japan
<i>serotinum</i>		18	Dowrick 1952b	—	Medit.
<i>uliginosum</i>		18	" "	H	Hungary
<i>viscidif-hirtum</i>		18	Battaglia 1951	—	S. Spain, N. Afr.
<i>frutescens</i>	Marguerite	18	Harling 1951b		
<i>v. crithmifolium</i>		27	Shimotomai 1937b	H	Canary Is., cult
<i>alpinum</i>		18, 36	" "	H	Eur. Alps

CHRYSANTHEMUM (cont.)

<i>atratum</i>		{ 18	Shimotomai 1937b	H	Eur., Alps
		36	Dowrick 1952b		
<i>coronarium</i>		18, 36	Shimotomai & H. '35	H	Medit.
<i>corymbosum</i>	18, 18 + iso	36	Dowrick 1952b	H	Caucasus
<i>oreades</i>		18, 36	" "	—	S.W. Asia, Cauc.
<i>segetum</i>	Corn M'gold	18, 36	" "	H	Eur., N. Afr., W. Asia
<i>balsamita</i>	Costmary	{ 18, 54	" "	H	W. Asia
		18, 54	Harling 1951a		
<i>ircutianum</i>		36	Shimotomai 1937b	—	Siberia
<i>praealtum</i>		36	Dowrick 1952b	H	Caucasus
<i>wakasaense</i>		36	" "	—	China, Japan
<i>indicum</i>		36, 54	" "	BH	China
cultivated vars.		45-63	" "		
<i>leucanthemum</i>	Ox-Eye D.	36, 54	" "	H	Eur., N. Asia
<i>camphoratum</i>		54	Harling 1951b	—	California
<i>ceratophylloides</i>		54	Shimotomai 1937b	—	Europe
<i>morifolium (sinense)</i>		54	" 1933	H	China, Japan
<i>shimotomaii</i>		54	" "	—	Japan
<i>sibiricum</i>		54	Shimotomai & H. '35	—	Arctic
<i>silvaticum</i>		54	Dowrick 1952b	—	Europe
<i>weyrichii</i>		54	Shimotomai 1937b	—	Sakhalin
<i>rubellum</i>		{ 63	Dowrick 1952b	H	<i>cult</i>
		70-80	Harling 1951b		
<i>arcticum</i>		72	Dowrick 1952b	H	Siberia
<i>decaisneanum</i>		72	Shimotomai 1933	—	Japan
<i>ornatum</i>		72	" "	H	China
<i>zawadskii</i>		72	" 1937b	—	Galicia
<i>sonare</i>		80	Dowrick 1952b	—	China, Japan
<i>maximum</i>	Shasta Daisy	85, 90, 126	" "	H	N. Spain
		148, 154,			
		160, 171			
<i>pacificum (marginatum)</i>		90	Shimotomai 1933	—	Japan
<i>yezoense (arcticum)</i>		90	" "	—	"
<i>lacustre</i>		198	Dowrick 1952b	H	Portugal

COTULA x = 10

<i>coronopifolia</i>	Brass Buttons	20	Castro & F. 1946	H	S. Africa
----------------------	---------------	----	------------------	---	-----------

TRIBE XI: VERNONIEAE

VERNONIA x = 9

<i>cinerea</i>		18	Grant 1953	—	Burma
----------------	--	----	------------	---	-------

ELEPHANTOPUS x = 11

<i>carolinianus</i>	Elephant's Foot	22	Baldwin & S. 1955a	—	E. & C. U.S.A.
<i>tomentosus</i>	Devil's Grand-mother	22	" " "	—	" "
<i>nudatus</i>		22	" " "	—	" "

TRIBE XII: EUPATORIEAE

LIATRIS* x = (9), 10

<i>elegans</i>		18	Langlet 1925	H	E: N. America
<i>chapmanii</i>	& 12 spp.	20	Gaiser 1949-51	H	S.E. U.S.A.

LIATRIS (cont.)

<i>aspera</i>	20, 22	Gaiser 1951b	—	E: N. America
<i>acidota</i>	20, 30	" 1949	H	"
<i>angustifolia</i>	20, 30, 40	" 1950b	—	"
<i>punctata</i>	20, 30, 40	" "	H	W: N. America
<i>pachnostachya</i>	20 + 0-3B, 40	" 1949	H	E: N. America
<i>microcephala</i>	20, 60	" "	—	"
<i>densispicata</i>	40	" 1950b	—	Minnesota
<i>bracteata</i>	60	" "	—	Texas

AGERATUM $x = 10$

<i>houstonianum</i> (mexicanum)	20	Cooper & M. 1935	H	Mexico
<i>conyzoides</i>	{ 20 40	Ishikawa 1916 Mittra 1947	HM	Tropics

EUPATORIUM* $x = 10, 17$ (Triploids Apomictic)

$x = 10$

<i>cannabinum</i>	Hemp Agrimony	20	W. F. Grant 1953	H	Eur., N. Asia
<i>coelestinum</i>	Mist Flower	20	" "	H	N. America
<i>ianthinum</i>		20	Holmgren 1919	H	Mexico
<i>patens</i>		20	Krapovickas 1951a	—	Argentina
<i>perfoliatum</i>	Boneset & 14 spp.	20	Grant 1953	HM	N. America
<i>recurvans</i>	& 2 spp.	20, 30	" "	—	"
<i>purpureum</i>		20, 40	" "	HM	"
<i>pilosum</i>	& 3 spp.	30	" "	—	"
<i>pubescens</i>		30, 40	" "	—	"
<i>mohrii</i>	& 2 spp.	40	" "	—	"
<i>rothrockii</i>		c. 80	" "	—	"

$x = 17$

<i>ageratoides</i>		34	Holmgren 1919	H	N. Amer., W.I.
<i>occidentale</i>	& 2 spp.	34	Grant 1953	—	N. America
<i>petiolatum</i>		c. 34	Holmgren 1919	H	Mexico
<i>purpusi</i>		34	" "	H	California
<i>rugosum</i>	White Snakeroot	{ 34 36	Grant 1953 Cooper & M. 1935	HM	Chile, Peru
<i>glandulosum</i>		51	Grant 1953	H	Mexico

ADENOSTYLES $x = 19$

<i>albifrons</i>		38	Langlet 1936	H	Europe
<i>alpina</i>		38	" "	H	"
<i>leucophylla</i>		38	Favarger 1953	H	W. Alps

MIKANIA $x = 19$

<i>scandens</i>	Cl. Hempweed	38	Mittra 1947	H	Temp. America
-----------------	--------------	----	-------------	---	---------------

TRIBE XIII: MUTISIEAE

TRICHOCLINE $x = 18$

<i>cineraria</i>		36	Covas & S. 1947	—	S. America
------------------	--	----	-----------------	---	------------

MUTISIA $x = 23$

<i>species</i>		46	Snoad 1952	H	S. America
----------------	--	----	------------	---	------------

GERBERA (PERDICIUM) $x = 23, 25$

<i>anandria</i>		46	M. & S. 1935	H	Siberia, Japan
<i>integripetala</i>		46	Kishimoto 1936	H	Formosa
<i>jamesoni</i>	Barborton Daisy	50	" "	H	Transvaal

CHAPTALIA $x = 24$				
<i>integrifolia</i>	48	Baldwin & S. 1947b	—	Trop. America
<i>nutans</i>	48	„ „	—	Mexico
CYCLOLEPIS $x = 27$				
<i>genistoides</i>	54	Covas & S. 1947	—	N. Patagonia
PLAZIA $x = 27$				
<i>argentea</i>	54	Covas & S. 1946	—	Argentina
PROUSTIA $x = 27$				
<i>ilicifolia</i>	54	Covas & S. 1946	—	Chile

Group XVI

GENTIANALES

239

H

PRIMULALES

240, 241

H

PLANTAGINALES

242

H



Primula sinensis

239 GENTIANACEAE

LOMATOGONIUM $x=5$

<i>rotatum</i>	10	D. Löve 1953	—	Circumpolar
----------------	----	--------------	---	-------------

GENTIANA (incl. GENTIANELLA)* $x=5, 6, 7, x_2=11, 13$

<i>tenella</i>	10	Favarger 1949a	H	North Reg.
<i>nivalis</i>	14	" "	H	Europe
<i>utriculosa</i>	22	" " 1952b	H	"
<i>brachyphylla</i>	24	Mattick, T. 1950	H	"
<i>frigida</i>	24	Skalinska 1951	H	"
<i>algida</i>	26	S. & S. 1938	H	Siberia
<i>altaica</i>	26	" "	H	"
<i>andrewsii</i> & 10 spp.	26	Rork 1949	H	E: N. America
<i>septemfida</i>	26	S. & S. 1938	H	Asia M.—Persia
<i>makinoi</i>	26	Sakai 1934	H	Japan
<i>pneumonanthe</i>	26	Scheerer 1939	H	Eur., N. Asia
<i>scabra</i>	26	Suzuka 1950	H	Manch., N. China
<i>bavarica</i>	28	Mattick, T. 1950	H	C. Europe
<i>verna</i>	{ 26	Skalinska 1950a	H	Eur., Asia
	28	Favarger 1949a		
<i>acaulis</i> Stemless G.	36	Rork 1949	H	Europe
<i>alpina</i>	36	Favarger 1949a	H	"
<i>amarella</i>	36	D. Löve 1953	—	W. Eur.—Siberia
<i>aurea</i>	36	" "	—	Arctic
<i>austriaca</i>	36	Favarger 1952b	—	Europe
<i>campestris</i> Field G.	36	" " 1949a	H	"
<i>clusii</i>	{ 36	" " "	H	"
	36	Skalinska 1950a		
<i>insubrica</i>	36	Favarger 1952b	—	"
<i>kochiana</i>	36	" " 1949a	H	C. Europe
<i>praecox</i>	36	Skalinska 1951	—	Europe
<i>prostrata</i>	36	Favarger 1952b	H	N. Temp.
<i>quinqueflora</i>	36	Rork 1949	H	E: U.S.A.
<i>saxosa</i>	36	Favarger 1952b	H	New Zealand
<i>tenuifolia</i>	36	" "	H	"
<i>lutea</i> Gentian	40	" " 1949a	HM	Eur., Asia M.
<i>punctata</i>	{ 40	" " 1942b	H	Europe
	40	Skalinska 1951		
<i>purpurea</i>	40	Favarger 1949a	H	"
<i>macrophylla</i>	42	Rork 1949	—	Siberia
<i>asclepiadea</i>	{ 44	Favarger 1949a	H	Europe
	44	Skalinska 1951		
<i>ciliata</i>	44	Favarger 1949a	H	"
<i>detonsa</i>	44	D. Löve 1953	H	N. Eur., Arctic Russia
<i>cruciata</i>	52	Favarger 1949a	H	Eur., N. Asia
<i>phlogifolia</i>	52	Rork 1949	H	E. Eur., Asia
<i>straminea</i>	52	" "	H	W. China
<i>crinita</i>	78	" "	—	E: N. America
<i>procera</i>	78	" "	—	"

CENTAURIUM (ERYTHRAEA) $x=7$

<i>littorale</i> Centaury	{ c. 38	Wulff 1937a	—	Europe
<i>(vulgare)</i>	c. 56	Warburg, M. 1939		

CENTAURIUM (cont.)				
<i>minus</i>	42	Rork 1949	—	N. America
<i>pulchellum</i>	42	„ „	—	Eur., Temp. Asia
SWERTIA $x = 7, 9, 12$				
<i>cuspidata</i>	18	Sakai 1940	—	N. Temp.
<i>perennis</i>	18	„ 1935	—	„
	24	Woycicki 1937	H	„
	28	Favarger 1952b	—	„
<i>bimaculata</i>	24	Suzuka 1950	H	Himalayas
EXACUM $x = 9$				
<i>affine</i>	36	Sugiura 1936	H	Socotra
LEIPHAIMOS (VOYRIA) $x = 9$				
<i>azurea</i>	36	Winge 1925	—	Tropics
MENYANTHES $x = 9$				
<i>trifoliata</i> Buckbean	54	Rork 1949	M	N. Temp.
EUSTOMA $x = 9$				
<i>russellianum</i> Prairie Gentian	72	Rork 1949	H	Neb.—Tex.
NYMPHOIDES (LIMNANTHEMUM) $x = 9$				
<i>cristata</i>	18	Mookerjea 1951	—	India, China
<i>peltata</i> Water Fringe	24?	Wang, D. 1951	H	Eurasia
(<i>L. nymphaoides</i>)	54	Scheerer 1939	H	E: N. America
<i>cordata</i> Floating Heart	36	Rork 1949	H	E: N. America
BLACKSTONIA (CHLORA) $x = 11$				
<i>perfoliata</i> Yellow-wort	44	Maude 1939	—	Eur., S.W. Asia, Morocco
HALENIA $x = 11$				
<i>elliptica</i>	22	Favarger 1952b	H	Himalayas
BARTONIA $x = 13$				
<i>paniculata</i>	52	Rork 1949	—	N. America
<i>virginica</i>	52	„ „	—	„
NEUROTHECA $x = 15$				
<i>loeselioides</i>	30	Favarger 1952b	—	W. Trop. Africa
FAURIA $x = 17$				
<i>crista-galli</i>	68	M. & S. 1935	H	N. Japan
ENICOSTEMA $x = 19$				
<i>littorale</i>	38	Srinivasan 1941	—	Tropics
FRASERA $x = 13?$				
<i>caroliniensis</i>	78	Rork 1949	H	E: N. America

240 PRIMULACEAE

CYCLAMEN $x = 5, 11, 12, 17$				
<i>balearicum</i>	20	de Haan & D. 1951	H	Balearic Is.
<i>repandum</i>	20	„ „	H	France—Greece

CYCLAMEN (cont.)

<i>creticum</i>	22	de Haan & D. 1951	H	Crete
<i>cilicium</i>	30	" "	H	Asia Minor
<i>cyprium</i>	30	" "	H	Asia M., Cyprus
<i>libanoticum</i>	30	" "	H	Syria
<i>orbiculatum</i>	30	" "	H	S.E. Eur., As. M., Caucasus
<i>pseudibericum</i>	30	" "	H	Asia Minor
<i>europaeum</i>	34	" "	H	C. Europe
<i>neapolitanum</i>	34	" "	H	France—Asia M.
<i>africanum</i>	68	" "	H	Algeria
<i>persicum</i> Florists' C.	48	" "	H	E. Medit.
garden forms	48, 96	" "	H	<i>cult</i>
<i>graecum</i>	84-85	" "	H	E. Medit.

PRIMULA * $x = 8, 9, 10, 11, 12, 13$ S. 1. SOULIEI $x = 8$

<i>rupicola</i>	16	Bruun 1932b	—	Yunnan
-----------------	----	-------------	---	--------

S. 2. INAYATII $x = 8$

<i>inayatii</i>	16	Bruun 1932b	—	E. India
-----------------	----	-------------	---	----------

S. 3. FARINOSAE $x = 8, 9, 10, 11$

(i) <i>blandula</i>	16	Bruun 1932b	—	Burma, Tibet
<i>caldaria</i>	16	" "	—	Yunnan
<i>genesteriana</i>	16	" "	—	"
<i>glabra</i>	16	" "	—	Himalayas
<i>knuthiana</i>	16	" "	—	China
<i>sertulum</i>	16	" "	—	"
<i>stenocalyx</i>	16	" "	—	"

(ii) <i>exigua</i>	18	" "		North Reg.
--------------------	----	-----	--	------------

<i>farinosa</i>	Bird's-eye P. { 18, 72	" "	H	"
	18, 36	Davies 1953		
<i>farinifolia</i>	18	Bruun 1932b	—	Caucasus
<i>frondosa</i>	18	" "	H	Thrace
<i>fauriei</i>	18	" "	H	Japan
<i>modesta</i>	18	" "	H	"
<i>longiflora</i>	36	" "	H	S.E. Europe
<i>scotica</i>	54	" "	—	Scotland
<i>scandinavica</i>	72	" "	—	S. Scandinavia
<i>laurentiana</i>	72	" "	—	Quebec, etc.
<i>capitellata</i>	72	" "	H	S.W. Asia
<i>magellanica (decipiens)</i>	72	" "	—	Magellan
<i>stricta</i>	126	" "	—	Arctic

(iii) <i>fasciculata</i>	18	" "	—	Yunnan
<i>chrysopa</i>	20	" "	H	China
<i>yargonensis</i>	20	" "	H	Tibet
<i>tibetica</i>	20	" "	—	"
<i>involutrata</i>	22	" "	H	Himalayas
<i>sibirica</i>	{ 22	S. & S. 1938	H	Arctic, Himal.
	44	Bruun 1932b		

S. 4. CAPITATAE $x = 9$

<i>capitata</i>	18	Bruun 1932b	H	Himalayas
<i>crispata</i>	18	" "	H	Sikkim
<i>lacteocapitata</i>	18	" "	—	"

PRIMULA (cont.)

<i>mooreana</i>	18	Bruun 1932b	H	Sikkim
<i>sphaerocephala</i>	18	" "	H	Yunnan
S. 5. MALACOIDES $x = 9$				
<i>effusa</i>	18	Bruun 1932b	H	Yunnan
<i>ferbesii</i>	18	" "	H	China, Burma
<i>malacoides</i>	18, 36	" "	H	W. China
garden forms	18, 36 (54)	Janaki Ammal 1952a	H	cult
S. 6. VERTICILLATA $x = 9$				
<i>floribunda</i>	18	Bruun 1932b	H	Himalayas
<i>verticillata</i>	18	" "	H	S. Arabia
<i>kewensis</i> (flor. \times vert.)	36	" "	H	cult
S. 7. AURICULA $x = 11$; $x_3 = 31$ (9 + 11 + 12)				
<i>palinuri</i>	44	Wanner 1943	H	S. Italy
<i>hortensis</i>	54?	Bruun 1932b	H	cult
<i>auricula</i>	62	Wanner 1943	H	C. Europe
<i>hirsuta</i>	62	" "	H	"
<i>integrifolia</i>	62	" "	H	"
<i>viscosa</i>	62	" "	H	"
<i>glaucescens</i>	62?	" "	H	Alps
<i>minima</i>	62?	" "	H	C. Europe
<i>marginata</i>	90?	Bruun 1932b	H	Alps
S. 8. MUSCARIOIDES $x = 10$				
<i>atricapilla</i>	20 + 1-3B	Bruun 1932b	—	Tibet
<i>bellidifolia</i>	20	" "	—	Himalayas
<i>cernua</i>	20 + 3B	" "	—	China
<i>littoniana</i>	20	" "	H	"
<i>apoclita?</i>	40	" "	—	Tibet
<i>cyanantha</i>	40	" "	"	"
<i>deflexa?</i>	40	" "	H	W. China
<i>lepta</i>	40	" "	H	Yunnan
<i>menziesiana</i>	40	" "	H	Bhutan
S. 9. SOLDANELLOIDEAE $x = 10$				
<i>buryana</i>	20	Bruun 1932b	—	Himalayas
<i>nutans</i>	20	" "	H	Yunnan
<i>reidii</i>	20	" "	H	Kumaon (Him.)
<i>wollastonii</i>	20	" "	—	Himalayas
S. 10. YUNNANENSIS $x = 11$				
<i>yunnanensis</i>	22	Bruun 1932b	—	China
S. 11. MINUTISSIMAE $x = 11$				
<i>reptans</i>	22	Bruun 1932b	—	Himalayas
S. 12. CUNEIFOLIA $x = 11$				
<i>nipponica</i>	22	Bruun 1932b	H	Japan
<i>suffrutescens</i> Sierra P.	44	" "	H	California
S. 13. AURICULATA $x = 11$				
<i>rosea</i>	22	Bruun 1932b	H	Himalayas
<i>elliptica</i>	22	" "	—	"
<i>algida</i>	18? S. & S. 1938	" "	H	W. Asia
	44	Bruun 1932b	"	"
<i>luteola</i>	44	" "	H	Caucasus
<i>auriculata</i>	45	S. & S. 1940	H	"
S. 14. DENTICULATA $x = 11$				
<i>denticulata</i>	22 + 0-5B	Bruun 1932b	H	Himalayas
as <i>cachemiriana</i>	44 + 8B	" "	—	"
<i>erythrocarpa</i>	22 + 0-5B	" "	—	Bhutan
<i>crispa</i>	44 + B	" "	H	Himalayas

PRIMULA (cont.)

S. 15. SIKKIMENSIS $x = 11$					
<i>sikkimensis</i>	& 11 spp.	22	Bruun 1932b	H	Himalayas
S. 16. CANDELABRA $x = 11$					
<i>pulverulenta</i>	& 15 spp.	22	Bruun 1932b	H	China
<i>japonica</i>		44	" "	H	Japan
S. 17. ROTUNDIFOLIA $x = 11$					
<i>gambeliana</i>		22	Bruun 1932b	—	Himalayas
S. 18. NIVALES $x = 11$					
<i>chionantha</i>		22 + 2-7B	Bruun 1932b	H	Yunnan
<i>macrophylla</i>		22	" "	—	Himalayas
<i>maximowiczii</i>		22	" "	—	N. China
<i>nivalis</i>		22	S. & S. 1938	H	C. Asia
<i>obliqua</i>		22	Bruun 1932b	—	Himalayas
<i>purdomii</i>		22	" "	—	Kansu
<i>russeola</i>		22	" "	—	Tibet
<i>sinoplangtaginea</i>		22	" "	—	Yunnan
<i>tangutica</i>		22	" "	—	China
<i>ellisiae</i>		44	" "	—	N. America
<i>leucops</i>		44	" "	—	Szechuan
<i>parryii</i>		44	" "	H	W: N. America
<i>rusbyi</i>		44	" "	H	New Mexico
S. 19. PETIOLARES $x = 11$					
<i>winteri</i>		22	Bruun 1932b	H	Himalayas
S. 20. VERNALES $x = 11$					
<i>elatior</i>	Oxlip	22	Bruun 1932b	—	Eur., Asia Min.
<i>juliae</i>	& 17 spp.	22	" "	H	Caucasus
<i>veris</i>	Cowslip	22	" "	H	Eur., Asia Min.
<i>vulgaris</i>	Primrose	22	" "	H	Europe
S. 21. MEGASEAEFOLIA $x = 11$					
<i>megaseaeifolia</i>		22	Bruun 1932b	—	Asia Minor
S. 22. GRANDIS $x = 11$					
<i>grandis</i>		44	Bruun 1932b	H	Caucasus
S. 23. CORTUSOIDES $x = 11, 12, 13$					
(i) <i>geraniifolia</i>		22	Bruun 1932b	H	Himalayas
<i>heucherifolia</i>		22	" "	H	W. China
<i>latiseeta</i>		22	" "	—	Tibet
(ii) <i>maclareni</i> ?		24	" "	—	Korea
<i>mollis</i>		24	" "	—	Himalayas
<i>seclusa</i>		24	" "	H	Yunnan, Burma
<i>septemloba</i>		24	" "	—	China
(iii) <i>pauliana</i>		24	" "	—	Szechuan
(iv) <i>cortusoides (dentiflora)</i>		24	" "	H	Siberia
<i>hymenophylla</i>		24	" "	—	Tibet
<i>lichiangensis</i>		24	" "	H	Yunnan
<i>polyneura</i>		24	" "	—	China
<i>saxatilis</i>		24	" "	H	Korea
<i>veitchii</i>		24	" "	H	China
<i>sieboldii</i>		24, 36	" "	H	Japan
(v) <i>jesoana</i>		26	" "	H	"
S. 24. BULLATAE $x = 12$					
<i>forrestii</i>		24	Bruun 1932b	H	China
<i>fruticosa</i>		24	" "	H	cult
<i>redolens</i>		24	" "	—	Yunnan
<i>rufa</i>		24	" "	H	"

PRIMULA (cont.)

S. 25. SINENSIS	x = 12				
<i>calciophila</i>		24	Bruun 1932b	—	Hupeh
<i>sinensis</i>	Chinese P.	24	" "	H	cult
		48	Darlington 1931a		
S. 26. OBCONICA	x = 12				
<i>obconica</i>		24, 48	Bruun 1932b	H	China
<i>sinolisteri</i>		24	" "	—	Yunnan
<i>werringtonensis</i>		24	" "	—	"
S. 27. PYCNOLOBA	x = 12				
<i>pycnoloba</i>		24	Bruun 1932b	—	W. China
S. 28. REINII	x = 12				
<i>reinii</i>		24	Bruun 1932b	H	Japan
LYSIMACHIA	x = 9, 12, 14				
<i>nemorum</i>		18	Wulff 1938	—	Europe
<i>clethroides</i>		24	Sugiura 1936a	H	China, Japan
<i>vulgaris</i>	Yellow Loosestrife	28	Lewitzky 1934	H	Eurasia
<i>nummularia</i>	Creeping Jenny	36	Wulff 1938	H	Eur., Caucasus
<i>punctata</i>		30	Reese 1953	—	Austria—Cauc., Asia Minor
ANDROSACE	x = 9, 10				
<i>villosa</i>		72	S. & S. 1940	H	Cauc., Himal.
<i>septentrionalis</i>	Rock Jasmine	20	Dahlgren 1916	H	N. Hemisph.
HOTTONIA	x = 10				
<i>palustris</i>	Water Violet	{ 20	Ehrenberg 1945,	H	Europe
		{ 20	Wulff 1938		
SOLDANELLA	x = 10				
<i>carpatica</i>		40	Satczek 1951	—	E. Europe
<i>montana</i>		40	" "	H	"
NAUMBERGIA (LYSIMACHIA)	x = 10?				
<i>thyrsiflora</i>	Tufted Loosestrife	c. 40	Dahlgren 1916	—	N. Temp.
ANAGALLIS	x = 10, 11				
<i>tenella</i>		22	Maude 1940	—	Europe
<i>arvensis</i>	Scarlet Pimpernel	40	Wulff 1937b	—	"
CENTUNCULUS	x = 11				
<i>minimus</i>	Chaffweed	22	Hagerup 1941b		Eur., N. & S. Am.
CORTUSA	x = 12				
<i>matthioli</i>		24	Bruun 1932b	—	Eur., N. Asia
OMPHALOGRAMMA	x = 12				
<i>farreri</i>		48	Bruun 1932b	H	Burma
<i>elwesianum</i>		96	" "	H	Himalayas
SAMOLUS	x = 12?				
<i>valerandi</i>	Brookweed	c. 24, c. 36	Wulff 1937a	—	Cosmop.
GLAUX	x = 15				
<i>maritima</i>	Black Saltwort	30	Wulff 1937a	—	Temp.
DODECATHEON	x = 22				
<i>alpinum</i>		44	Thompson 1953	H	California
<i>conjungens</i>		44	" "	—	W: N. America

DODECATHEON (cont.)

<i>cusickii</i>	44	Thompson 1953	H	W: N. America
<i>dentatum</i>	44	" "	—	" "
<i>frigidum</i>	44	" "	H	Behring Str.
<i>jeffreyi</i>	42, 44, 66	" "	H	W: N. America
<i>clevelandii</i>	44, 66, 88	" "	H	California
<i>hendersonii</i>	44, 66, 132	" "	H	W: N. America
<i>subalpinum</i>	66	" "	—	California
<i>hansenii</i>	88	" "	—	" "
<i>meadia</i>	Shooting Star	" "	H	N. America
<i>poeticum</i>	88	" "	—	Oregon

TRIENTALIS $x = ?$

<i>europaea</i>	{ c. 112	L. & L. 1944b	—	Subarctic
	{ c. 160	Ehrenberg 1945		

241 PLUMBAGINACEAE

PLUMBAGELLA $x = 6$

<i>micrantha</i>	12	Phillips 1938	—	C. Asia
------------------	----	---------------	---	---------

PLUMBAGO $x = 7, 8$

<i>europaea</i>	Common P.	14	Phillips 1938	M	S. Eur., Cauc.
<i>capensis</i>	Leadwort	{ 14	Dahlgren 1916	H	S. Africa
		{ 16	D'Amato 1940b		

CERATOSTIGMA $x = 7, 9$

<i>plumbaginoides</i>	{ 14	Phillips 1938	H	China
	{ 18	Sugiura 1944		

ARMERIA $x = 8, 9$

<i>pinifolia</i>	16	Sugiura 1939	—	Portugal	
<i>sardoa</i>	16	" "	—	Corsica, Sard.	
<i>alliacea</i>	18	" "	—	W. Medit.	
<i>arctica</i>	18	" 1944	—	N.W. Europe	
<i>berlengensis</i>	18	" "	—	Portugal	
<i>canescens</i>	18	" 1939	H	C. Europe	
<i>cariensis</i>	18	" 1944	—	Asia Minor	
<i>denticulata</i>	18	" 1939	—	Italy	
<i>filicaulis</i>	18	" "	—	Spain	
<i>juncea</i>	18	" "	H	S. France	
<i>juniperifolia</i>	18	" "	H	Spain, Portugal	
<i>longiaristata</i> (<i>allioides</i>)	18	" "	H	Spain	
<i>macrophylla</i>	18	" 1944	H	"	
<i>plantaginea</i>	18	" 1939	H	W. Europe	
<i>pseudarmeria</i>	18	Phillips 1938	H	S. Europe	
<i>scabra</i>	18	Sugiura 1944	—	N. Asia	
<i>welwitschii</i>	18	" 1938	H	Spain	
<i>mauritanica</i>	{ 18	Phillips 1938	H	N. Africa	
	{ 54	Sugiura 1939			
<i>maritima</i>	Thrift, Sea Pink	{ 18	D'Amato 1940b	H	W. Eur., Sib., N.
		{ 18	L. & L. 1944b		& S. America
<i>v. alpina</i>		{ 18	Phillips 1938		
		{ 36	Sugiura 1939		

LIMONIUM (STATICE) $x = 6, 7, 8, 9$ (Apomixis)

<i>mucronatum</i>	12	Baker unp.	—	Morocco
<i>puberulum</i>	14	"	H	Canary Is.
<i>echioides</i>	28	"	H	Medit., Asia M.
<i>bicolor</i>	16	Sugiura 1939	—	China
<i>bonduellii</i>	16	" "	H	Algeria
<i>cordatum</i>	16	" 1944	H	Medit.
<i>dictyocladum</i>	16	" 1939	—	"
<i>ferulaceum</i>	16	Baker unp.	H	"
<i>ovalifolium</i>	16	"	—	W. Europe
<i>spicatum</i>	16	Sugiura 1936a	H	Casp.—Altai
<i>thouinii</i>	16	" 1944	H	S.E. Eur., Cauc.
<i>globulariaefolium</i>	64	" 1939	H	Medit., N. Afr.
<i>vulgare</i>	Sea Lavender	{ 32 Choudhuri 1942	H	Eur., N. Afr., Asia
		{ 36 Castro & F. 1946		Minor
<i>binervosum</i>	(Apo.)	{ 32 Choudhuri 1942	H	W. Europe
		{ 34, 35, 36 Baker unp.		
<i>bellidifolium</i>		18 Choudhuri 1942	H	Europe
<i>latifolium</i>		18 Baker unp.	H	Bulg.—S. Russia
<i>sinuatum</i>		18 Wulff 1937a	H	Medit.
<i>suworowii</i>		18 " "	H	N.E. Persia— Turkestan
<i>californicum</i>		18 Baker unp.	—	California
<i>mexicanum</i>		18 "	—	"
<i>suffruticosum</i>		18 Aleskowsky 1930	—	Cauc.—C. Asia
<i>gmelinii</i>		{ 18, 27 " "	H	E. Eur., Siberia
		{ 36 Pólya 1948		
<i>confusum</i>	(Apo.)	27 D'Amato 1949b	—	Sicily
<i>cosyrense</i>	"	27 Baker unp.	H	"
<i>recurvum</i>	"	27 "	—	Portland Bill
<i>transwallianum</i>	"	27, 35 "	—	S. Wales, W. Irel.
<i>humile</i>		36 Choudhuri 1942	—	N.W. Europe
<i>sareptans (tomentella)</i>		36 Aleskowsky 1930	—	Russia
<i>lychnidifolium</i>	(Apo.)	25 Baker unp.	—	W. Eur., N. Afr.
<i>paradoxum</i>	"	33 "	—	S. Wales, N. Irel.
<i>girardianum</i>	"	35 "	—	Portugal

GONIOLIMON $x = 8$

<i>incanum</i>	16	Sugiura 1936a	H	N. Afr.—Siberia
<i>tataricum</i>	{ 16 " 1944		H	S.E. Eur.,—Sib.
	{ 32 Baker unp.			

ACANTHOLIMON $x = 8$

<i>androsaceum</i> v. <i>creticum</i>	32	Baker unp.	H	E. Medit.
---------------------------------------	----	------------	---	-----------

242 PLANTAGINACEAE

PLANTAGO* $x = 4, 5, 6$ $x_2 = 9$ (4 + 5)

$x = 4$					
<i>ovata</i>	Isfghol	8	Hyde 1953	M	N.W. India
$x = 5$					
<i>amplexicaulis</i>		10	MacCullagh 1934	—	Med.—N.W. Ind.
<i>bellardi</i>		10	" "	—	Med., S.W. Asia
<i>cretica</i>		10	" "	—	E. Medit.
<i>serraria</i>		10	" "	—	Medit.
<i>acanthophylla</i>		10–12	" "	—	S. Europe

PLANTAGO (cont.)

<i>aristata</i>	Indian Wheat	20	Heitz 1927	Fo	N. & S. Amer.
<i>coronopus</i>	Buck's Horn	10, 11, 30	Bøcher <i>et al.</i> 1953	V	Eur., N. Asia
$x = 6$					
<i>arborescens</i>	& 14 spp.	12	MacCullagh 1934	—	Canary Is.
<i>psyllium</i>	Fleawort & 3 spp.	12	Heitz 1927	M	Med.—N.W. Ind.
<i>sericea</i>		12–14	MacCullagh 1934	—	Peru
<i>maritima</i>	Sea Plantain	12	Hagerup 1941b	V	Eur., N. Amer., Arctic
		12 (18), 24	Earnshaw 1942		
		12	Nakajima 1930,		
<i>lanceolata</i>	Ribwort	{ 12, 13	Bøcher <i>et al.</i> 1953	Fo	Eur., N. Asia
		24, 96	MacCullagh 1934		
<i>major</i>	Great Pl.	12	Turesson 1938	Fo	Eur., Asia M.
<i>v. asiatica</i>		24	Ikeno 1929		
<i>alpina (borealis)</i>	& 7 spp.	24	MacCullagh 1934	—	C. Europe
<i>tenuiflora</i>		24	Tarnavski 1938	—	E. Eur., N. Asia
<i>japonica</i>		36	Ono 1953	—	Japan
$x = 6, 10$					
<i>albicans</i>		{ 12	MacCullagh 1934	—	Medit.
		20	Lorenzo-Andreu 1951		
<i>patagonica</i>	Indian Wheat	{ 24	MacCullagh 1934	Fo	N. & S. Amer.
		20	Covas & S. 1946		
$x_2 = 9$					
<i>raoultii</i>		18	MacCullagh 1934	—	New Zealand
LITTORELLA $x = 6$					
<i>uniflora</i>	Shoreweed	24	L. & L. 1942	—	C. & N. Europe

Group XVII

CAMPANALES

243–246

H(S)

POLEMONIALES

247, 248

H

BORAGINALES

249

HST



Campanula persicifolia

243 CAMPANULACEAE

JASIONE $x = 6, 7$

<i>montana</i>	Sheep's Bit	{ 12	Rosen 1931	H	Europe
		12, 14	Wulff 1937a		
<i>perennis</i>		60	Rosen 1931	H	W. Europe

ASYNEUMA (PHYTEUMA, PODANTHUM) $x = 6, 17$

<i>limonifolium</i>		24	Rosen 1931	H	S. Eur., Asia M.
<i>sibthorpiatum</i>		24	" "	H	Greece
<i>canescens</i>		34	Sugiura 1942	H	C. Eur., Cauc.
<i>campanuloides</i>		102	" "	H	Caucasus

PHYTEUMA $x = (6), 12, 13, 14$

<i>betonicifolium</i>		24	Favarger 1953	H	Alps
<i>lobelioides</i>		24	Sugiura 1942	H	Asia Minor
<i>micchauxioides</i>		24	" "	—	—
<i>halleri</i>		26	" "	H	S. Europe
<i>nigrum</i>		26	" "	H	S.W. Europe
<i>globulariifolium</i>		28	Favarger 1953	—	Alps, Pyrenees
<i>hemisphaericum</i>		28	" "	H	" "
<i>scheuchzeri</i>		36	Rosen 1931	H	S. Europe
<i>spicatum</i>	Spiked Rampion	36	Armand 1912	H(R)	Europe

SPECULARIA (CAMPANULA) $x = 7, 10$

<i>speculum</i>	Venus' Looking Glass	{ 14	Koller 1945*	H	S. Europe
		20	Sugiura 1942		
<i>hybrida</i>		20	" "	—	Medit.
<i>pentagonia</i>		20	" "	H	"

CODONOPSIS $x = 8$

<i>clematidea</i>		16	Rosen 1931	H	C: W. Asia
<i>subsimplex</i>		16	" "	H	C. Asia

EDRAIANTHUS (WAHLENBERGIA) $x = 8?$

<i>graminifolius</i>		{ 24	Rosen 1931	H	Dalmatia
		32	Sugiura 1942		
<i>tenuifolius</i>		32	" "	H	"

PLATYCODON $x = (7?) 9$

<i>grandiflorum</i>	Chinese Bell Flower	{ 18	Suzuka & K. 1949	H	E. Asia
		28	Kihara <i>et al.</i> 1931		
<i>v. mariesii</i>		18	Sugiura 1942		

CAMPANULA * $x = 8, 10, 12, 13, 14, 17$

<i>latiloba</i> (<i>grandis</i>)		16	Marchal 1920	H	Siberia
<i>pyrenaica</i>		16	Sugiura 1942	H	Pyr., Balearic Is.
<i>subpyrenaica</i>		16	" "	H	N.E. Spain
<i>persicifolia</i>	16, 17, 18, 32		Darlington & L. C. '50	H	Eur., Sib.
<i>isophylla</i>		32	Vilmorin & S. 1927b	H	Riviera
<i>pulloides</i>		48	Koller 1945*	H	<i>cult</i>
<i>thyrsoides</i>		48	Sugiura 1942	H	Eur. Alps
<i>phycitocalyx</i>		{ 16	La Cour 1945*	H	S.W. Asia
		102	Sugiura 1942		
<i>carpatia</i>		{ 32	Koller 1945*	H	Carpathians
		34	Sugiura 1942		

CAMPANULA (cont.)

<i>alliariaeifolia</i>	{ 96 68	M. & S. 1935 Sugiura 1942	H	Asia M., Cauc.
<i>x = 10</i>				
<i>macrostylia</i>	20	Marchal 1920	H	Crimea
<i>patula</i>	20	Rutland 1941	H	S. Europe
<i>propinqua</i> v. <i>grandiflora</i>	20	Sugiura 1942	H	Armenia, Persia
<i>rapunculus</i> Rampion	20	Marchal 1920	HV	Eur., N. Africa
<i>stevensi</i> v. <i>nana</i>	20	Koller 1945*	H	Cauc., Persia
<i>divaricata</i>	40	La Cour 1945*	—	N. America
<i>ramosissima</i> (loreyi) as <i>drabifolia</i>	{ 20 34	Marchal 1920 Sugiura 1942	H	S. Europe
<i>x = 12</i>				
<i>colorata</i>	24	Kishore 1951	H	Sikkim Himal.
<i>x = 13</i>				
<i>cervicaria</i>	26	Sugiura 1942	H	Greece
<i>peregrina</i> (<i>primulaefolia</i>)	26	Marchal 1920	H	Spain, Portugal
<i>x = 14</i>				
<i>erinus</i>	28	Koller 1945*	H	Medit., Canaries
<i>x = 17</i>				
<i>allionii</i>	34	La Cour 1945*	H	Alps
<i>barbata</i>	34	Marchal 1920	H	"
<i>betonicaefolia</i>	34	" "	H	Greece
<i>bononiensis</i> & 16 spp.	34	Sugiura 1942	H	E. Eur., W. Asia
<i>dasyantha</i>	34	Sakai 1935	—	Sib., W: N. Am.
<i>fragilis</i>	34	Marchal 1920	—	Adriatic
<i>hypopolia</i>	34	La Cour 1945*	—	Temp. Asia
<i>latifolia</i> Giant C.	34	Vilmorin & S. 1927b	H	Eur.—Kashmir
<i>longestyla</i>	34	" "	H	Caucasus
<i>medium</i> Canterbury Bell	34	Sugiura 1942	H	S. Europe
<i>piperi</i>	34	La Cour 1945*	H	W: N. America
<i>punctata</i> (<i>nobilis</i>)	34	Marchal 1920	H	Japan, Siberia
<i>pyramidalis</i>	34	" "	H	Europe
<i>pyraversi</i>	34	Vilmorin & S. 1927b	H	<i>cult</i>
<i>trachelium</i>	34	Marchal 1920	H	Eur., Sib., N. Afr.
<i>tubulosa</i>	34	La Cour 1945*	—	Crete
<i>van Houttii</i>	34	Vilmorin & S. 1927b	H	<i>cult</i>
<i>thyrsoidea</i>	{ 34 48	Rosen 1931 Sugiura 1942	H	Eur. Alps
<i>cochlearifolia</i> (<i>pusilla</i>)	{ 34 68	Marchal 1920 Sugiura 1942	H	Alps
<i>glomerata</i>	34, 68	" 1939	H	Eur.—C. Asia
<i>rotundifolia</i> Harebell	34, 68	Böcher 1936	H	North Reg.
	34, 55-56, 68	Guinochet 1942		
<i>v. hostii</i>	68	Sugiura 1942		
<i>portenschlagiana</i>	{ 34 102	Marchal 1920 Sugiura 1942	H	Dalmatia
<i>raddeana</i>	{ 34 102	Rosen 1931 Sugiura 1942	H	Caucasus
<i>abietina</i>	68	Sugiura 1942	H	S.E. Europe
<i>caespitosa</i>	68	" "	H	Alps
<i>collina</i>	68	" "	H	Caucasus

CAMPANULA (cont.)

<i>garganica</i>	{ 68	Sugiura 1942	H	Alps
	102	" 1937b		
<i>kladniana</i>	68	" 1942	H	E. Europe
<i>morettiana</i>	68	" "	H	Alps
<i>pulla</i>	68	" "	H	"
<i>scheuchzeri</i>	68	Böcher 1936	H	"
<i>speciosa</i>	68	Sugiura 1942	H	S.W. Europe
<i>americana</i>	102	" "	H	N. America
<i>caucasica</i>	102	" "	—	Caucasus
<i>elegans</i>	102	" "	H	Siberia
<i>laciniata</i>	102	" "	H	Greece
<i>mirabilis</i>	102	" "	H	Caucasus
<i>rapunculoides</i>	102	" "	HV	Eur., A.M., Cauc.
<i>sibirica</i>	102	" "	H	C. Eur.—N. Asia

WAHLENBERGIA $x = (8?) 9$

<i>gracilentia</i>	18	Gulline unsp.	—	Australia
<i>gymnoclada</i>	18	"	—	"
<i>consimilis</i>	36	"	H	"
<i>quadrifida</i>	54	"	—	"
<i>saxicola</i>	72	"	H	Tasmania
<i>gracilis</i>	64	Sugiura 1942	H	N. Caled., S.E. As.

ADENOPHORA $x = 17$

<i>bulleyana</i>	34	Sugiura 1942	H	Szechuan
<i>diplodonta</i>	34	Rosen 1931	H	China
<i>forrestii</i>	34	Sugiura 1942	—	"
<i>remotifolia</i>	37!	M. & S. 1935	H	Japan
<i>thunbergiana</i>	37!	" "	—	"
<i>stricta</i>	34	Sugiura 1942	H	"
<i>hakusanensis</i>	34, 51	M. & S. 1935	—	"
<i>lilifolia (communis)</i>	{ 34	Modilewski 1934	H(R)	C. Eur.—Sib.
	102	Sugiura 1942		
<i>ornata</i>	102	" "	H	W. China
<i>palustris</i>	102	" "	H	E. Asia
<i>potaninii</i>	102	" "	H	W. China
<i>lamarckii</i>	104	M. & S. 1936	H	E. Europe

MICHAUXIA $x = 17$

<i>campanuloides</i>	34	Sugiura 1942	H	Asia Minor
----------------------	----	--------------	---	------------

PRISMATOCARPUS $x = 17$

<i>strictus</i>	34	Sugiura 1942	—	S. Africa
-----------------	----	--------------	---	-----------

SYMPHANDRA $x = 17$

<i>hoffmanni</i>	34	Vilmorin & S. 1927b	H	Bosnia
------------------	----	---------------------	---	--------

TRACHELIUM $x = 17$

<i>coeruleum</i>	34	Sugiura 1942	H	S. Europe
------------------	----	--------------	---	-----------

244 LOBELIACEAE

ISOTOMA $x = 7$

<i>fluviatilis</i>	14	Subramanyam 1951	—	Australia
--------------------	----	------------------	---	-----------

LÓBELIA * $x = 7, 9?$

$x = 7$

<i>brevifolia</i>	& 7 spp.	14	Bowden 1954	—	E: N. America
<i>cardinalis</i>	Cardinal Fl.	14	Vilmorin & S. 1927b	H	N. America
<i>cliffortiana</i>		14	Sugiura 1936b	—	Trop. Amer.
<i>urens</i>		14	Vilmorin & S. 1927b	—	Europe
<i>siphilitica</i>		14	Okuno 1937	HM	N. America
<i>as speciosa</i>		42	Sugiura 1936b		
<i>triquetra</i>		14, 42	Okuno 1937	—	S. Africa
<i>amoena</i>		28	Bowden 1954	H	E: N. America
<i>elongata</i>		28	" "	—	" "
<i>glandulosa</i>		28	" "	H	" "
<i>sessilifolia</i>		28	Sugiura 1937b	—	Kamchatka
<i>erinus</i>		28, 42	Vilmorin & S. 1927b	H	S. Africa
<i>richardsonii</i>		42	Sugiura 1937b	—	—
<i>tupa</i>	Blood L.	42	Vilmorin & S. 1927b	—	Chile, Peru

$x = 9$

<i>ramosa</i>		18	Sugiura 1936a	—	Australia
<i>tenuior</i>		18	" 1937b	—	"

245 GOODENIACEAE

GOODENIA $x = 8$

<i>elongata</i>		16	W. D. Jackson unp.	—	Australia
<i>geniculata</i> v. <i>lanata</i>		16	" "	—	"
<i>ovata</i>		16	" "	H	"

SCAEVOLA $x = 8$

<i>lobelia</i>		16	Kausik 1939	—	Tropics
----------------	--	----	-------------	---	---------

SELLIERA $x = 8$

<i>radicans</i>		16	W. D. Jackson unp.	H	Aust., N.Z., Chile
-----------------	--	----	--------------------	---	--------------------

VELLEYA $x = 8$

<i>montana</i>		16	W. D. Jackson unp.	—	Australia
<i>paradoxa</i>		16	" "	H	"

246 STYLIDIACEAE

STYLIDIUM $x = ?$

<i>adnatum</i>		36	Sugiura 1936a	H	Australia
----------------	--	----	---------------	---	-----------

247 POLEMONIACEAE

GYMNOSTERIS $x = 6$

<i>nudicaulis</i>		12	MacMillan 1949	—	N. America
-------------------	--	----	----------------	---	------------

HUGELIA $x = 7$

<i>virgata</i>		14	Flory 1937	H	N. America
----------------	--	----	------------	---	------------

PHLOX $x = 7$

<i>amoena</i>		14	Flory 1934	H	S.E: U.S.A.
<i>amplifolia</i>		14	" 1937	H	"

PHLOX (cont.)

<i>arendsii</i>		14	Flory 1934	H	<i>cult</i>
<i>bifida</i>	Tenpoint Ph.	14	" 1937	H	E: U.S.A.
<i>carolina</i>		14 + 0-2B	Meyer 1944	H	S.E: U.S.A.
<i>divaricata</i>	Blue Ph.	14 + 0-1B	" "	H	E: N. America
<i>drummondii</i>		14 (28)	" "	H	Texas
<i>glaberrima</i>	Meadow Ph.	14 + 0-3B	" "	H	E: U.S.A.
<i>maculata</i>	Perennial Ph.	14	Flory 1934	H	E: N. America
<i>nivalis</i>		14 + 0-4B	Meyer 1944	H	S.E: U.S.A.
<i>ovata</i>		14	Flory 1934	H	"
<i>paniculata</i>		14 + 0-10B	Meyer 1944	H	E: U.S.A.
<i>pilosa (argillacea)</i>		14	Flory 1934	H	E: N. America
<i>stellata</i>		14	" "	H	<i>cult</i>
<i>stolonifera</i>		14	" "	H	E: U.S.A.
<i>subulata</i>	Moss Ph.				
		14 + 0-13B, 28	Meyer 1944	H	"
<i>adsurgens</i>	Periwinkle Ph.	14, 21	Flory 1934	H	W.: N. America
<i>suffruticosa</i>		14 + 0-1B, 21	Meyer 1944	H	<i>cult</i>
<i>huckleyi</i>		28	Flory 1937	H	W. Virginia
<i>douglasii (diffusa)</i>		28	" 1934	H	W: N. America
<i>hoodii</i>		28	" "	H	" "

GILIA $x = 7, 9$

$x = 7$

<i>aggregata</i>	Skyrocket G.	14	Flory 1937	H	W: N. America
<i>longiflora (collomia)</i>		14	" "	H	" "
<i>rubra</i>	Texas Plume	14	" "	H	N. America

$x = 9$

<i>achilleaefolia</i>	Yarrow G.	18	V. Grant 1953	H	California
<i>angelensis</i>		18	" "	—	"
<i>capitata</i>		18	" "	H	W: N. America
<i>foetida</i>		18	Covas & S. 1946	—	Chile
<i>gilioides</i>		18	Grant 1950b	—	W: N. America
<i>laciniata</i>		18	Langlet 1936	H	Peru, Chile, Arg.
<i>latiflora</i>		18	Grant 1950b	—	W: N. America
<i>millefoliata</i>		18	" 1953	—	" "
<i>multicaulis</i>		18	Sugiura 1936b	H	California
<i>rigidula</i>		18	Flory 1937	H	W: N. America
<i>tricolor</i>	Bird's-Eyes	18	Grant 1953	H	California
<i>tenuiflora</i>		18	" 1950b	H	"
<i>clivorum</i>		36	" "	—	
<i>sinuata</i>		36	" "	—	W: N. America

COLLOMIA (GILIA) $x = 8$

<i>grandiflora</i>		16	Flory 1937	H	W: N. America
<i>heterophylla</i>		16	" "	—	" "
<i>linearis</i>		16	" "	H	" "
<i>coccinea (biflora)</i>		32	" "	H	Chile

LINANTHUS (GILIA) $x = 9$

<i>aureus</i>		18	Flory 1937	H	W: N. America
<i>densiflorus</i>		18	" "	H	California
<i>dianthiflorus</i>		18	" "	H	"
<i>dichotomus</i>		18	" "	H	W: N. America
<i>parviflorus</i>		18	" "	H	" "

PHACELIA (cont.)				
<i>bicolor</i>	26	Cave & C. 1950	—	W: N. America
<i>fremontii</i>	26	" 1942	—	California
<i>glandulifera</i>	26	" 1950	—	"
<i>gymnoclada</i>	26	" "	—	"
<i>leibergii</i>	26	" "	—	"
EUCRYPTA $x=5, 6$				
<i>micrantha</i>	12	Cave & C. 1950	—	N. America
<i>chrysanthemifolia</i>	20	" 1944	—	"
LEMMONIA $x=7$				
<i>californica</i>	14	Cave & C. 1950	—	California
ERIODICTYON* $x=7$				
<i>angustifolium</i>	28	Cave & C. 1950	—	W: N. America
<i>californicum</i>	28	" 1947	—	California
3 species	28	" '47, '50		
NAMA* $x=7$				
<i>aretioides</i>	14	Cave & C. 1950	—	N. America
<i>demissum</i>	14	" "	—	W: N. America
<i>stenocarpum</i>	14	" "	—	California
6 species	14	" "		
<i>densum</i>	28	" 1942	—	N. America
<i>lobbit</i>	28	" "	—	"
<i>jamaicense</i>	28	" 1950	—	W. Indies
HESPEROCHIRON $x=8$				
<i>californicus</i>	16	Cave & C. 1950	—	California
NEMOPHILA* $x=7, 9$				
<i>phacelioides</i>	14	Cave & C. 1950	H	E: N. America
<i>maculata</i> Spotted N.	18	" "	H	" "
<i>menziesii</i>	18	" 1942	H	W: N. America
6 species	18	" "		
DRAPERIA $x=9$				
<i>systyla</i>	18	Cave & C. 1947	—	California
HYDROPHYLLUM* $x=9$				
<i>canadense</i>	18	Bowden 1940a	H	E: N. America
<i>capitatum</i>	18	Cave & C. 1942	H	W: N. America
<i>virginianum</i>	18	" 1950	H	E: N. America
4 species	18	" '42, '50		
PHOLISTOMA $x=9$				
<i>auritum</i>	18	Cave & C. 1942	H	California
<i>membranaceum</i>	18	" "	—	"
<i>racemosum</i>	18	" 1947	—	"
EMMENANTHE $x=9$				
<i>rosea</i>	18	Cave & C. 1950	—	W: N. America
<i>penduliflora</i> Yellow Bells	36	" 1942	H	California
ROMANZOFFIA $x=11$				
<i>sitchensis</i>	22	Cave & C. 1950	H	W: N. America

ROMANZOFFIA (cont.)

<i>suksdorfi</i>	22	Cave & C. 1942	—	W: N. America
<i>tracyi</i>	22	" 1947	—	" "

MILTITZIA $x = 12, 13$

<i>glandulifera</i>	24	Cave & C. 1950	—	W: N. America
<i>lutea</i>	24	" "	—	" "
<i>parviflora</i>	24	" "	—	" "
<i>glaberrima</i>	26	" "	—	" "

TURRICULA $x = 13$

<i>parryi</i>	26	Cave & C. 1947	—	W: N. America
---------------	----	----------------	---	---------------

WIGANDIA $x = 19$

<i>kunthii</i>	38	Cave & C. 1947	—	Trop. America
<i>macrophylla</i>	38	" 1950	H	" "
<i>species</i>	76	" "	—	" "
<i>vigieri</i>	44?	Sugiura 1936a	H	cult

HYDROLEA $x = 20$

<i>spinosa</i>	40	Svensson 1925	H	Trop. America
----------------	----	---------------	---	---------------

249 BORAGINACEAE

AMSINCKIA $x = 4, 5, 6, 7. x_2 = 13, 15, 17, 19$

<i>lunaris</i>	8	Ray 1954	—	California
<i>spectabilis</i>	10	" "	—	"
<i>douglasiana</i>	12	" "	—	"
<i>grandiflora</i>	12	" "	—	"
<i>furcata</i>	14	" "	—	"
<i>vernica</i>	14	" "	—	"
<i>retrorsa</i>	16, 26, 34	" "	—	N. America
<i>eastwoodiae</i>	24	" "	—	California
<i>gloriosa</i>	24	" "	—	"
<i>tessellata</i>	24	" "	—	"
<i>lycopsoides</i>	30	" "	H	"
<i>intermedia</i>	30, 34, 38	" "	H	"
<i>inepta</i>	36	" "	—	L. California
<i>angustifolia</i>	32	Strey 1931	—	Chile

BRUNNERA (ANCHUSA) $x = 6$

<i>macrophylla</i>	<div> <div>12</div> <div>12</div> <div>16?</div> </div>	<div> <div>Britton 1951</div> <div>Smith 1932</div> <div>Strey 1931</div> </div>	H	Siberia, Cauc.
--------------------	---	--	---	----------------

CACCINIA $x = (6) 12$

<i>crassifolia</i>	24	Strey 1931	H	Armen.—Afghan.
<i>strigosa</i>	24	" "	H	Persia

CYNOGLOSSUM * $x = (6) 12$

<i>amabile</i>	24	Britton 1951	H	China, Tibet
<i>officinale</i>	24	" "	—	Eur., Asia
<i>zeylanicum</i>	24	" "	H	India
<i>aequinoctiale</i>	48	" "	H	Kenya, Uganda

MERTENSIA $x = (6) 12$

<i>elongata</i>		24	Britton 1951	H	Kashmir
<i>maritima</i>	Oyster Plant	24	L. & L. 1948	H	W. Europe
<i>sibirica</i>		24	Strey 1931	H	E. Siberia
<i>virginica</i>	Virg. Cowslip	24	Britton 1951	H	E: U.S.A.
<i>ciliata</i>		24, 48	" "	H	W: N. America

ADELOCARYUM (PARACARYUM) $x = 6?$

<i>coelestinum</i>		c. 24	Strey 1931	H	N. India
--------------------	--	-------	------------	---	----------

ASPERUGO $x = 6?$

<i>procumbens</i>		48	Reese 1953	M	Eur., W. Asia, N. Africa
-------------------	--	----	------------	---	--------------------------

LITHOSPERMUM $x = (6), 7, 8, 12$

<i>canescens</i>	Puccoon	14	Britton 1951	H	E: N. America
<i>tenuiflorum</i>		28	Strey 1931	—	Asia M.—India
<i>apulum</i>		28	Britton 1951	—	Medit.
<i>fruticosum</i>		28	Lorenzo-Andreu '51	H	S. Europe
<i>erythrorhizon</i>		28	Suzuka 1950	—	Japan
<i>officinale</i>	Gromwell	28	Britton 1951	B	Europe, W. Asia
<i>arvense</i>	Corn G.	16?	Suzuka 1950		
		28	Britton 1951,	—	Eurasia
		28	L. & L. 1944b		
<i>purpureo-coeruleum</i>		16	Reese 1952a	HM	Europe
<i>zollingeri</i>		16	Britton 1951	H	Java
<i>croceum</i>		24	" "	—	N. America
<i>incisum</i>		24	" "	—	"

OMPHALODES $x = (6), 7$

<i>lusitanica (nitida)</i>		24	Britton 1951	H	Spain, Portugal
<i>linifolia</i>		28	" "	H	S.W. Europe
<i>verna</i>	Blue-eyed Mary	42	" "	H	S. Europe

MYOSOTIS $x = 6, 7, 8, 9$

<i>sylvatica</i>	Wood Forget-me-not	14	S. & S. 1941		
		18	Britton 1951,	H	Eurasia
		18, 32	Geitler 1936		
<i>sparsiflora</i>		18	" "	—	Eur., N. Asia
<i>alpestris (pyrenaica)</i>	24, 48, c. 72	" "	" "	H	N. Reg.
<i>hispida</i>	Early F.	48	" "	H	Eur., S.W. Asia, N. Africa
<i>welwitschii</i>		48	Britton 1951	H	Spain
<i>arvensis</i>	Common F.	c. 48	Strey 1931	H	N. Temp.
		c. 54	Geitler 1936		
<i>palustris (scorpioides)</i>		64	L. & L. 1942	H	Eurasia
<i>caespitosa (laxa)</i>		c. 80	Strey 1931	H	North Reg.

ANCHUSA $x = 6, 8, 9?$

<i>affinis</i>		16	Britton 1951	H	Abyssinia
<i>barrieri</i>		16	Smith 1932	H	S. Eur., Asia M.
		18	Lewitzky 1940		
<i>capensis</i>		16	Britton 1951	H	S. Africa
<i>granatensis</i>		16	" "	H	Spain
<i>officinalis</i>	Alkanet	16	" "	V	Europe
<i>riparia</i>		16	" "	H	Cent. Europe
<i>ochroleuca</i>		24	" "	H	Caucasus
<i>azurea (italica)</i>		32	" "	H	Medit.
var. "Opal"	32 + 1-4B	" "	" "		

CORDIA $x = 7, 8$

<i>glabra</i>	28	Britton 1951	H	Brazil
<i>alba</i>	32	" "	H	Trop. America
<i>angiocarpa</i>	32	" "	—	Cuba
<i>boissieri</i>	32	" "	H	Texas—Mexico
<i>leucosebestera</i>	32	" "	—	Cuba
<i>sebestena</i> Aloe Wood	32	" "	HM	W. Indies
<i>alliodora</i>	c. 72	" "	W	Trop. America
<i>rothii</i>	c. 72	" "	—	India
<i>tremula</i>	c. 80	" "	—	W. Indies

PULMONARIA * $x = 7, 11$

<i>officinalis</i> Lungwort	14	Tarnavski 1935	HM	Eur., Caucasus
<i>rubra</i> & 3 spp.	14	" "	H	S.E. Europe
<i>angustifolia</i>	14, 28	" "	H	Europe
<i>saccharata</i> Jerusalem Sage	{ 14, 16	Strey 1931	Sp	<i>cult</i>
	22	Tarnavski 1935		
<i>affinis</i>	22	" "	H	France
<i>tuberosa</i>	22	" "	—	Europe
<i>mollis</i> (mollissima)	28	" "	H	C. Eur., N. Asia
<i>montana</i>	28	" "	—	C. Europe

HELIOTROPIUM $x = 7-13$

<i>mendocinum</i>	14	Schnack & C. 1947	—	Chile
<i>supinum</i>	16	Britton 1951	M	S. Eur., S.W. Asia, N. Africa
<i>arborescens</i> Heliotrope	18	" "	HP	Peru
(<i>peruvianum</i>)				
<i>indicum</i>	22	" "	H	W. Indies
<i>europaeum</i>	{ 24	Svensson 1925		
	32	Britton 1951	HM	Medit.
<i>amplexicaule</i>	{ 26	" "		
	28	Covas & S. 1947	H	Argentina
<i>curassavicum</i>	{ 26	Britton 1951		
	28	Schnack & C. 1947	HM	U.S.A., W. Ind.

BORAGO $x = 8$

<i>officinalis</i> Borage	16	Britton 1951	Sp	Eur., N. Afr., As. Minor
<i>laxiflora</i>	32	Strey 1931	H	Corsica

LOBOSTEMON * $x = 7$

<i>fruticosus</i> & 9 spp.	14	Levy 1934	H	S. Africa
<i>echioides</i>	14, 42	" "	—	"
<i>glaucohyllus</i>	14, 28	" "	H	"
<i>bolusii</i>	28	" "	—	"
<i>decorus</i>	28	" "	—	"
<i>hispidus</i>	28	" "	—	"

ONOSMA $x = 7$

<i>tauricum</i>	14	Britton 1951	H	S.E. Europe
<i>stellulatum</i>	28	" "	H	"

ECHIUM * $x = 7, 8$

<i>hispidissimum</i>	14, 28	Litardière 1943	—	Medit.
<i>candicans</i> & 7 spp.	16	" "	H	Madeira
<i>lusitanicum</i>	16	Britton 1951	H	Spain, Portugal

ECHIUM (cont.)

<i>plantagineum</i>	& 2 spp.	16	Britton 1951	HM	Medit.
<i>aculeatum</i>	& 3 spp.	16, 32	Litardière 1943	—	Canary Is.
<i>rossicum</i>		24	" "	—	S. Eur., Cauc.
<i>rosulatum</i>		32	Britton 1951	—	Spain
<i>vulgare</i>	Viper's Bugloss	32	" "	M	Eur., W. Asia
		16, 32	Litardière 1943		

NONNEA (NONEA) $x = 7, 8$

<i>lutea</i>		14	Britton 1951	—	Europe
<i>rosea</i>		16	" "	H	Caucasus
<i>versicolor</i>		16	Gusuleac & T. 1935	—	" "
<i>decumbens</i>		c. 32	Strey 1931	—	W. Medit.

LAPPULA (ECHINOSPERMUM) $x = 8?$

<i>myosotis</i>		c. 48	Strey 1931	M	Eur., S.W. Asia
-----------------	--	-------	------------	---	-----------------

LYCOPSIS (ANCHUSA) $x = 8$

<i>orientalis</i>		16	Strey 1931	—	S. Eur., S.W. Asia
<i>arvensis</i>	Bugloss	c. 54	Svensson 1925	—	Eurasia

MOLTKIA $x = 8$

<i>petraea</i>		16	Britton 1951	H	Greece
----------------	--	----	--------------	---	--------

CERINTHE $x = 8, 9$

<i>retorta</i>		16	Strey 1931	H	Greece
<i>major</i>	Honeywort	16	Britton 1951	HM	Switzerland
<i>glabra (alpina)</i>		18	" "	H	Eur., Alps
<i>minor</i>		18	" "	HM	S. Europe

EHRETIA $x = 8, 10$

<i>microphylla</i>	Philippine Tea	32	Britton 1951	BH	S.E. Asia
<i>(buxifolia)</i>					
<i>thyrsiflora</i>		32	" "	H	China, Japan
<i>anacua</i>		40	" "	—	Texas, Mexico

SYMPHYTUM $x = 9, 10$

<i>caucasicum</i>		c. 36	Strey 1931	H	Caucasus
<i>officinale</i>	Comfrey	36	Suzuka 1950	HM	Eur., W. Asia
<i>uplandicum</i>		36	Vaarama, L. & L. '48	H	<i>cult</i>
<i>peregrinum</i>		36	Maude 1939	H	E. Caucasus
<i>asperum</i>	Prickly C.	40	Britton 1951	H	Russia—Persia
<i>tauricum</i>		40	" "	H	S. Russia
<i>bulbosum</i>		c. 72	Strey 1931	H	Europe
<i>tuberosum</i>		c. 72	" "	HM	Eur., S.W. Asia

ALKANNA $x = 11$

<i>orientalis</i>		22	Britton 1951	D?	E. Medit.
-------------------	--	----	--------------	----	-----------

PENTAGLOSSA (CARYOLOPHA, ANCHUSA) $x = 11$

<i>sempervirens</i>		22	Britton 1951	H	W. Europe
---------------------	--	----	--------------	---	-----------

Group XVIII

SOLANALES

250, 251

HS

PERSONALES

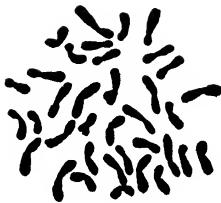
252–259

HS(T)

LAMIALES

260–264

HS(T)



Glechoma hederacea

250 SOLANACEAE

PETUNIA $x = 7, 9$						
<i>axillaris</i> (<i>nyctaginiflora</i>)	14	Kostoff <i>et al.</i> 1935	H		Argentina	
<i>integrifolia</i> (<i>violacea</i>)	14	Dermen 1931a	H		"	
	(28)	Levan 1937a				
<i>hybrida</i> (<i>ax.</i> \times <i>integ.</i>)	(21, 28, 35)	Dermen 1931a	H		<i>cult</i>	
<i>parodii</i>	14 + 0-1B	Sullivan 1947	—		Argentina	
<i>parviflora</i>	18	Ferguson & C. 1932	—		N. & S. Amer.	
CESTRUM $x = 8$						
<i>nocturnum</i> Night Jasmine	c. 16	Bhaduri 1933	H		W. Indies	
<i>parqui</i>	16	Schnack & C. 1947	H		Chile	
<i>purpureum</i> (<i>elegans</i>)	16	Carniel 1952	H		Mexico	
FABIANA $x = 9$						
<i>imbricata</i> False Heath	18	Goodspeed 1933	M		Peru	
NICANDRA $x = 9 +$ isochromosome						
<i>physaloides</i>	19, 20 (40)	Darlington & J. '45	HM		Peru	
	21?	Sinha 1951a				
NIEREMBERGIA $x = 9$						
<i>frutescens</i> Tall Cup Fl.	18	Goodspeed 1933	H		Chile	
NICOTIANA $x = 9, 10, 12$						
S. 1. PETUNIOIDES						
$x = 9$						
<i>alata</i> Jasmine Tobacco	18	Goodspeed 1945	H		Brazil	
<i>bonariensis</i>	18	" "	—		"	
<i>langsдорffii</i>	18	" "	—		"	
<i>sanderae</i>	18	" "	H		<i>cult</i>	
$x = 10$						
<i>longiflora</i>	20	" "	H		Chile	
<i>plumbaginifolia</i>	20	" "	H		Mexico—Arg.	
$x = 12$						
<i>acaulis</i>	24	" "	—		Argentina	
<i>acuminata</i>	24	" "	—		S. America	
<i>attenuata</i> Coyote T.	24	" "	M		Chile	
<i>corymbosa</i>	24	" "	—		Chile, Arg.	
<i>linearis</i>	24	" "	—		" "	
<i>miersii</i>	24	" "	—		" "	
<i>noctiflora</i> (<i>cavanillesii</i>)	24	" "	—		C. Argentine	
<i>pauciflora</i> (<i>caudigera</i>)	24	Goodspeed 1945	—		Chile	
<i>palmeri</i>	24	" "	—		S.W.: U.S.A.	
<i>petunoides</i> (<i>pampasana</i>)	24	" "	—		N. Argentine	
<i>sylvestris</i>	24	" "	—		N.W. Argentine	
<i>trigonophylla</i> Desert T.	24	" "	M		S.W.: U.S.A., Mexico	
<i>undulata</i>	24	" "	—		Andes	
<i>wigandioides</i>	24	" "	—		"	
<i>arentsii</i>	48	" "	—		Peru, Bolivia	
<i>bigei</i> ovil Indian T.	48	" "	M		W: U.S.A.	
<i>clevelandii</i>	48	" "	—		"	
<i>nudicaulis</i>	48	" "	—		N. Mexico	
<i>nesophila</i>	48	" "	—		Mexico	
<i>repanda</i>	48 (96)	" "	—		"	
<i>stocktonii</i>	48	" "	—		"	

NICOTIANA (cont.)

S. 2. RUSTICA

<i>benavidesii</i>	24	Goodspeed 1945	—	Peru
<i>cordifolia</i>	24	" "	—	Juan Fern.
<i>knightiana</i>	24	" "	—	S. Peru
<i>raimondii</i>	24	" "	—	Peru
<i>solanifolia</i>	24	" "	—	N. Chile
<i>thyrsiflora</i>	24	" "	—	N.W. Peru
<i>glauca</i> Tree T.	24	" "	—	N.W. Argentine
<i>paniculata</i>	24	" "	—	Peru
<i>rustica</i> Aztec T.	48	" "	IM	"

S. 3. TABACUM

<i>glutinosa</i>	24	" "	—	"
<i>tomentosa</i> Giant T.	24	" "	—	"
<i>tomentosiformis (rusbyi)</i>	24	" "	—	Bolivia
<i>otophora</i>	24	" "	—	Bolivia, Arg.
<i>setchellii</i>	24	" "	—	N. Peru
<i>tabacum</i> Common T.	48	" "	IM	Peru, <i>cult</i>
(72), (96)				
<i>digluta (glut. × tabacum)</i>	72	Goodspeed 1930	—	
<i>tabacum × Petunia parodii</i>	31	Clausen & G. 1925	—	<i>expt.</i>
		Pogliaga 1952	—	<i>expt.</i>

S. 4. SUAVEOLENTES

$x = 8$

<i>exigua</i>	32	Wheeler 1935	—	Queensland
<i>maritima</i>	32	" "	—	S. Australia
<i>velutina</i>	32	" 1945	—	Australia
<i>suaveolens</i>	32, 64	" 1935	H	S.E. Australia

$x = 9$

<i>gossei</i>	36	" "	—	C. Australia
---------------	----	-----	---	--------------

$x = 10$

<i>goodspeedii</i>	40	" "	—	S. Australia
<i>megalosiphon</i>	40	" "	—	N.E. Australia

$x = 11$

<i>rotundifolia</i>	44	" "	—	S.W. Australia
---------------------	----	-----	---	----------------

$x = 12$

<i>debneyi</i>	48	" "	—	N.E. Austr., N. Caled.
<i>fragrans</i>	48	" 1945	—	S. Pacific

$x_8 = (9 + 10)$

<i>benhamiana</i>	38	" "	—	Australia
<i>excelsior</i>	38	" "	—	"

$x_8 = (10 + 11)$

<i>occidentalis</i>	42	" "	—	"
---------------------	----	-----	---	---

SCHIZANTHUS $x = 10$

<i>pinnatus</i>	20	Sugiura 1937b	H	Chile
<i>retusus</i>	20	" "	H	Chile, Peru
<i>wisetonensis</i>	20	" 1936b	H	<i>cult</i>

BROWALLIA $x = 11$

<i>demissa</i>	22	Sugiura 1936a	H	S. America
<i>grandiflora</i>	22	" "	H	Peru
<i>viscosa</i>	22	" "	H	S. America
<i>speciosa</i>	44	" "	H	Colombia

BRUNFELSIA $x = 11$		22	Bhaduri 1933	H	Trop. America
<i>americana</i>		22	E.K.J. *	H	Brazil
QUINCULA $x = 10, 11$		20, 22, 24	Menzel 1950	H	Kans.—Mex.
<i>lobata</i>					
SALPIGLOSSIS $x = 11$		44	Vilmorin & S. 1928	H	Chile
<i>sinuata</i>					
ACNISTUS $x = 12$		24	Ratera 1943	—	Trop. America
<i>parviflorus</i>					
CAPSICUM $x = 12$					
<i>annuum</i>	Chilli, Red 24 (36, 48)	Pal <i>et al.</i> 1941	SpVVit	Trop. Amer., <i>cult</i>	
	Pepper, Paprika 24	Sinha 1950a			
<i>as baccatum</i>		Huskins & L. C. '30			
		(12) Christensen & B. '43			
<i>as frutescens</i>	Cayenne P., 24	Sinha 1950a			
	Bird P. (48)	Greenleaf 1947			
<i>microcarpum</i>		24 Schnack & C. 1947	—	W. Indies	
CYPHOMANDRA $x = 12$		24	Vignoli 1945a	F	S. America
<i>betacea</i>	Tree Tomato				
DATURA * $x = 12$		24	Suzuka & K. 1949	—	O.W. Tropics
<i>alba</i>		24	Vilmorin & S. 1927a	M	Tropics
<i>fastuosa</i>		24	Bergner 1943	M	China
<i>ferox</i>	& 4 spp.	24	Satina 1953	M	W: N. Amer.
<i>meteloides</i>	& 2 spp.	24	Satina <i>et al.</i> 1941	HM	Cosmop.
<i>stramonium</i>	Thorn A. { 24 (12, 25)	Belling & B. 1923			
	Jimson W. { (48)				
GRABOWSKIA $x = 12$		24	Ratera 1943	—	S. America
<i>duplicata</i>					
JABOROSA $x = 12$		24	Vignoli 1945a	H	Argentina
<i>integrifolia</i>					
LYCIUM $x = 12$		24	Schnack & C. 1947	—	Brazil
<i>cestroides</i>		24	Sugiura 1936b	H	China
<i>chinense</i>	Box Thorn	24	Ratera 1947	—	Brazil
<i>ciliatum</i>		24	„ 1943	—	Bolivia
<i>cuneatum</i>		24	„ 1947	—	Chile
<i>elongatum</i>					
LYCOPERSICUM (SOLANUM) $x = 12$		24	Barton 1950	VF	<i>cult</i> , Peru
<i>esculentum</i>	Tomato	(12, 25, 36, 48)	Rick 1945		
		(48)	Upcott 1935		
<i>cheesemannii</i>		24	Luckwill 1943	—	Galapagos
<i>glandulosum</i>		24	„ „	—	Peru
<i>hirsutum</i>		24	„ „	—	Peru, Ecuador
<i>peruvianum</i>		24	„ „	—	Peru
<i>pimpinellifolium</i>		24	„ „	—	„
<i>pissisi</i>		24	„ „	—	Peru, Chile

MARGARANTHUS $x = 12$					
<i>solanaceus</i>	24	Menzel 1950	—		Texas
SALPICHROA (WITHANIA) $x = 12$					
<i>rhomboidea</i> Huevo de Gallo	24	Vilmorin & S. 1928	V		Argentina
<i>(organifolia)</i>					
SCOPOLIA $x = 12$					
<i>lurida</i>	24	Vilmorin & S. 1928	H		Himalayas
SOLANDRA $x = 12$					
<i>grandiflora</i>	22-24	Campin 1924	H		Jamaica
	24	E.K.J.*			
PHYSALIS* $x = 12$					
<i>alkekengi</i> Winter Cherry,	24	Menzel 1951	FH		Eur.—Japan
Chinese Lantern Pl.					
<i>divaricata</i>	24	Baldwin & S. 1951b	—		O.W. Tropics
<i>francheti</i>	24	Sinha 1951b	H		Japan
<i>ixocarpa</i> Tomatillo	24	Menzel 1951	FH		S: U.S.A., Mex.
<i>philadelphica</i> Purple W. Ch.	24	Vilmorin & S. 1928	FH		N. America
<i>pruinosa</i> Strawb.-Tomato	24	Menzel 1951	F		E: U.S.A.
<i>pubescens</i> Barbados G.	24	" "	F		Trop. America
<i>virginiana</i> & 20 spp.	24	" "	F		N. America
<i>viscosa</i>	24	" "	F		S: U.S.A.—Arg.
	24	Covas & S. 1946			
<i>peruviana</i> Cape Gooseb.	24	Yamamoto & S. '32	F		S. America
	48	Menzel 1951			
<i>angulata</i> Ground Cherry	48	" "	F		Trop. Amer., Ind.
<i>minima</i> Sunberry	48	Bhaduri 1933	FV		O.W. Tropics
SOLANUM * $x = 12, 23$					
(i) Non-Tuberous Group					
$x = 12$					
<i>aculeatissimum</i>	24	Brock 1952	H		Trop. As. & Am.
<i>adventitum</i>	24	Westergaard 1948	—		Hungary
<i>aethiopicum</i>	24	Vilmorin & S. 1928	H		Trop. Afr. & Asia
<i>angustifolium</i>	24	Ratera 1943	—		Argentina
<i>argentinum</i>	24	" "	—		"
<i>auriculatum</i>	24	Vilmorin & S. 1928	H		Trop. Asia
<i>basilcbum</i>	24	Ratera 1943	—		Argentina
<i>capsicastrum</i> Christsmas Ch.	24	Vilmorin & S. 1928	H		Brazil
<i>cornutum</i>	24	" "	H		Mexico
<i>dillenianum</i>	24	Westergaard 1948	—		Sweden
<i>dulcamara</i> Bittersweet	24	Vilmorin & S. 1928	H		Eur., N. Asia
<i>eleagnifolium</i>	24	Heiser & W. 1948	—		U.S.A.
<i>gracile</i>	24	Vilmorin & S. 1928	HV		Trop. America
<i>insulae-paschalis</i>	24	Westergaard 1948	—		Easter Island
<i>jasminifolium</i>	24	Ratera 1943	—		Brazil
<i>jasminoides</i>	24	Vilmorin & S. 1928	H		"
<i>indicum</i>	24	Bhaduri 1935	M(V)		O.W. Tropics
<i>integrifolium</i> Scarlet E.P.	24	Vilmorin & S. 1928	H		Africa
<i>marginatum</i>	24	" "	—		Trop. Africa
<i>melongena</i> Egg Plant, 24 (36, 48)	24	Janaki-Ammal 1934	V		O.W. Tropics
Aubergine					
<i>muricatum</i> Pepino	24	Vilmorin & S. 1928	V		Peru
<i>nitidi-bacatum</i>	24	Westergaard 1948	—		Arg., Bolivia
<i>ovigerum</i>	24	Vazart 1950			

SOLANUM (cont.)

<i>pearcei</i>	24	Avanzi 1949	—	Chile
<i>pinnatum</i>	26 (24-28)	" "	—	" "
<i>pseudocapsicum</i>	Jerusalem Ch. 24	Vilmorin & S. 1928	H	Old World
<i>sarachioides</i>	24	Ratera 1943	—	Bolivia
<i>seafortianum</i>	24	Sinha 1950b	—	Trop. America
<i>tomatillo</i>	24	Jørgensen 1928	V	Chile
<i>torreyi</i>	24	La Cour 1952	—	W: N. Amer.
<i>torvum</i>	24	Bhaduri 1933	V	O.W. Tropics
<i>trilobatum</i>	24	" "	(V)	"
<i>verbascifolium</i>	24	Ratera 1943	(V)	"
<i>violaeifolium</i>	24	" "	—	Brazil
<i>wendlandi</i>	24	Vilmorin & S. 1928	H	Costa Rica
<i>warszewiczii</i>	24	Sinha 1950b	H	?
<i>xanthocarpum</i>	Thorny Nightsh. 24	Bhaduri 1933	HMV	O.W. Tropics
<i>luteum (nigrum)</i>	48	Jørgensen 1928	FV	Cosmop.
<i>miniatum</i>	& 8 spp. 48	Westergaard 1948	V	"
<i>guineense</i>	Sunberry 72	Vilmorin & S. 1928	FV	"
<i>(nigrum)</i>				
<i>memphiticum</i>	72	Jørgensen 1928	—	"
<i>nigrum</i> , s.l. B. Nightsh.	{ 24, 48, 72 24, 72 (96, 144)	Bhaduri 1933 Stebbins & P. 1949 Jørgensen 1928	FV	"
<i>roberti-eliae</i>	72	Westergaard 1948	—	
<i>robinsonianum</i>	72	Jørgensen 1928	—	Juan Fernandez
<i>x = 23</i>				
<i>aviculare</i>	Poroporo 46	Baylis 1954	H	Australia, N.Z.
<i>laciniatum</i>	92	" "	H	" "
(ii) Tuberous Group				
(a) Wild Species				
<i>x = 12</i>				
<i>ehrenbergii</i>	24	Hawkes unpub.	—	Mexico
<i>etuberosum</i>	24	" "	—	Chile
<i>jamesii</i>	24	H. B. Smith 1927	—	Peru
<i>lancifforme</i>	24	Hawkes 1944	—	Mexico
<i>morellifforme</i>	24	Hawkes unpub.	—	"
<i>phureja</i>	24	Rybin 1933	R	Bolivia
<i>pinnatisectum</i>	24	Hawkes unpub.	—	Mexico
<i>polyadenium</i>	24	Bukasov 1935	—	"
<i>simplicifolium</i>	24	Hawkes 1944	—	Argentina
<i>tarijense</i>	24	" "	—	Bolivia
<i>toralapanum</i>	24	Hawkes unpub.	—	"
<i>vernei</i>	24	" "	—	Argentina
<i>verrucosum</i>	24	Bukasov 1935	—	Mexico
<i>violacei-marmoratum</i>	24	Hawkes unpub.	—	Bolivia
<i>vernei</i>	24	Brücher & R. 1953	—	Argentina
<i>capsicibaccatum</i>	24	Hawkes 1954	—	Bolivia
<i>sanctae-rosae</i>	24	" "	—	Argentina
<i>yungasense</i>	24	" "	—	Bolivia
<i>bulbocastanum</i>	{ 24 36	Bukasov 1935 Hawkes unpub.	—	Mexico
<i>chacoense</i>	{ 24 36	H. B. Smith 1927 Hawkes unpub.	—	Paraguay

SOLANUM (cont.)

<i>commersonii</i>	Swamp P.	{ 24 Koopmans 1951 36 Rybin 1933	—	Argentina
<i>maglia</i>	Maglia	{ 24 Hawkes unp. 36 Rybin 1933	R	Chile
<i>millanii</i>		24, 36 Bukasov & L. 1935	—	Argentina
<i>cardiophyllum</i>		36 Hawkes 1944	R	Mexico
<i>acaule</i>		{ 36, 48 Brücher & R. 1953 48 Swaminathan 1954	—	Peru, Bol., Arg.
<i>antipoviczii</i>		48 Rybin 1933	—	Mexico
<i>colombianum</i>		48 " "	—	Ven., Col., Ecuad
<i>fendleri</i>	Navajo P.	48 Smith 1927	R	Mexico
<i>longiconicum</i>		48 Hawkes unp.	—	Costa Rica
<i>polytrichon</i>		48 " "	—	Brazil
<i>stoloniferum</i>		48 " "	—	Mexico
<i>sucrense</i>		48 Hawkes 1944	—	Bolivia
<i>tuquerrense</i>		48 Hawkes 1954	—	Colom., Ec.
<i>demissum</i>		72 Koopmans 1951	—	Mexico
<i>spectabilis</i>		72 Swaminathan & H. '54	—	"
<i>querreroense</i>		72 " " "	—	"
<i>brachycarpum</i>		72 Hawkes 1954	—	"
<i>moscopanum</i>		72 " "	—	Colombia

About 100 other species, 70 diploid and 30 tetraploid, were given in the previous edition. These now seem to be of doubtful value and are therefore omitted pending further study.

(b) Cultigens, Clonal Species and Hybrids

$x = 12$

<i>stenotomum</i>		24 Rybin 1933	R	Peru, Bolivia
<i>rybinii</i>		{ 24 (48) " " 1940 36 Mitra 1949	R	Colombia
<i>chaucha</i>		36 Rybin 1933	R	Peru, Bolivia
<i>andigenum</i>		48 Swaminathan 1954	R	Andes
<i>tuberosum</i>	Potato	(24) Müntzing 1937c 48 Swaminathan 1954	AR	Peru, <i>cult</i>
<i>curtilobum</i>		(96) Lamm 1937 60 Vilmorin & S. 1928		
<i>edinense</i>		60 Rybin 1933	R	Peru, Bolivia
<i>salamanii</i>		60 " 1930	R	Hab.?
<i>semidemissum</i>		60 Hawkes 1944	—	Mexico
		60 Rybin 1933	—	"
<i>tub. × antipoviczii</i>		72 Ivanov 1939	R	<i>expt.</i>
<i>antipo-phureja</i>		72 Koopmans 1951	R	"
<i>antipo-chacoense</i>		72 " "	R	"
<i>demisso-rosum</i>		120 " "	R	"

SARACHA $x = 12$

<i>procumbens</i>	24 Menzel 1950	—	Peru
<i>viscosa</i>	24 " "	—	Peru, Chile
<i>umbellata</i>	48 Krenke 1930	H	Peru

WITHANIA $x = 12$

<i>somnifera</i>	48 Bhaduri 1933	M	O.W. Trop., Med., S.W. Asia
------------------	-----------------	---	--------------------------------

ATROPA $x = 12$

<i>belladonna</i>	Deadly Night-shade	{ 50	Homedes 1943	M	Eur., S.W. Asia,
		72	Vilmorin & S. 1928		India
<i>baetica</i>		72	Fardy 1940	—	Spain
<i>acuminata</i>		72	Dutt 1952a	—	Himalayas

HYOSCYAMUS $x = 14, 17$

<i>muticus</i>	Indian Henbane	28	Griesinger 1937	M	Egypt, Asia M.
<i>niger</i>	Henbane	{ 33, 34	" "	M	Eur., W. Asia,
		34	Vaarama 1950		Himalayas

DUBOISIA $x = 30$

<i>leichtardtii</i>		60	Barnard 1949	M	S.E. Australia
<i>myoporoides</i>		60	" "	HM	E. Australia

250a NOLANACEAE

NOLANA $x = 12$

<i>atriplicifolia</i>		24	Datta 1933a	—	Chile, Peru
<i>prostrata</i>		24	" "	H	"
<i>grandiflora</i>		24	Sugiura 1936b	H	"
<i>tenella</i>		24	" "	H	"

251 CONVULVULACEAE

CUSCUTA * $x = 7, 15$

<i>europaea</i>	Gr. Dodder & 3 spp.	14	Finn 1937	Par	Eur., S.W. Asia
<i>approximata</i>		28	" "	Par	Spain
<i>monogyna</i>		28	" "	Par	Eur., S.W. Asia
<i>reflexa</i>		28	" "	ParM	India
<i>epilinum</i>		42	" "	Par	E. Eur., Asia
<i>arvensis</i>		56	" "	Par	N. America
<i>campestris</i>		56	Fogelberg 1938	Par	"
<i>pentagona</i>		c. 56	" "	Par	"
<i>glomerata</i>	& 3 spp.	30	" "	Par	"
<i>gronovii</i>		60	" "	Par	"
<i>cephalanthi</i>		60	" "	Par	"

CONVOLVULUS $x = 10, 11$

<i>pluricaulis</i>		20	Singh 1951	—	India
<i>tricolor</i>		20	Kano 1929	H	S. Europe
<i>elongatus</i>		22	Heitz 1926	—	Canaries
<i>spithameus</i>		22	Wolcott 1937	H	N. America
<i>sciculus</i>		44	Heitz 1926	H	Medit.
<i>undulatus</i>		c. 22	" "	H	"
<i>scammonia</i>	Scammony	c. 24	" "	M	E. Medit.
<i>arvensis</i>	Lesser Bindweed	50	Wolcott 1937	—	N. Temp.

CALYSTEGIA $x = 11, 12$

<i>hederacea</i>		22	Nakajima 1931	—	Ind., China, Afgh.
<i>soldanella</i>	Sea B.	22	Kano 1929	(V)	Temp.
<i>sepium</i>	Bindweed	{ 22	" "	M(V)	"
		24	Felfoldy 1947		

CRESSA $x = 14$					
<i>truxillensis</i>		28	Heiser & W. 1948	—	Peru
QUAMOCLIT (IPOMOEAE, MINA) $x = 14, 15$					
<i>coccinea</i>	Star Glory	28	King & B. 1937	H	Arizona
<i>angulata</i>		{ 28	Nakajima 1931	—	Brazil
		30	Kano 1929		
<i>lobata (versicolor)</i>		{ 28	King & B. 1937	H	Mexico
		30	Sugiura 1936b		
<i>pennata</i>	Cypress Vine	30	King & B. 1937	H	Trop. America
<i>sloteri (pennata × coccinea)</i>		58	„ „	H	cult
EXOGENIUM (IPOMOEAE) $x = 14?$					
<i>purga</i>	Jalap	24-28	Heitz 1926	HM	Mexico
ARGYREIA $x = 15$					
<i>nervosa</i>		30	Watanabe 1939	—	E. Asia
CALONYCTION (IPOMOEAE) $x = 15$					
<i>aculeatum</i>	Moonflower	30	Kano 1929	H(V)	Tropics
<i>(speciosum)</i>					
<i>muricatum</i>		30	Nakajima 1931	H(V)	„
DICHONDRA $x = 15$					
<i>repens</i>		30	Covas & S. 1947	—	W. Indies
HEWITTIA $x = 15$					
<i>sublobata (bicolor)</i>		30	Watanabe 1939	H	O.W. Tropics
MERREMIA (IPOMOEAE) $x = 15$					
<i>distillatoria</i>	Ulan	30	King & B. 1937	M	India, Malaya
<i>(campanulata)</i>					
<i>gemella</i>		58	Watanabe 1939	—	S.E. Asia—Trop. Aust.
OPERCULINA (IPOMOEAE) $x = 15$					
<i>dissecta</i>		30	King & B. 1937	—	Trop. America
<i>tuberosa</i>		30	„ „	H	Tropics
<i>turpethum</i>	Ching-Chaw	30	Watanabe 1939	M	Tr. Afr. & Asia
STICTOCARDIA (IPOMOEAE) $x = 15$					
<i>campanulata</i>		30	Watanabe 1939	—	Trop. Africa
IPOMOEAE (PHARBITIS) * $x = 15$					
<i>biloba</i>	Pohne	30	Sugiura 1936a	FoSb(V)	Tropics
<i>carnea</i>		30	Rao 1947a	—	S. America
<i>carolina</i>		30	Wolcott 1937	—	W. Indies
<i>nil</i>	Jap. M.G. & 14 spp.	30	King & B. 1937	H	Tropics
<i>pandurata</i>	Wild Potato Vine	30	„ „	H	S.E. U.S.A.
<i>pulchella</i>		30	Rao 1947a	H	Ceylon
<i>reptans</i>		30	„ „	—	O.W. Tropics
<i>learii</i>	Blue Dawnflower	{ 30	King & B. 1937	—	Trop. America
		32?	Rao 1940		
<i>staphylina</i>		32?	„ „	—	India, Malaya
<i>ramouri</i>		60	King & B. 1937	—	Cuba
<i>batatas</i>	Sweet Potato	90	Ting & K. 1953	R	Trop. America

252 SCROPHULARIACEAE

(1) NON-PARASITIC GROUP

ZALUZIANSKIA (NYCTERINIA) $x = 6$					
<i>capensis</i>	12	Sugiura 1936a	H		S. Africa
<i>villosa (selaginoides)</i>	12	" "	H		"
ALONSOA $x = 6$					
<i>warscewiczii (grandiflora)</i>	24	Propach 1934	H		Peru
LINARIA* $x = 6, 7, 8$					
<i>alpina</i>	12	Favarger 1949b	H		Eur. Alps
<i>barbata</i>	12	M. & S. 1935	—		S. Africa
<i>dalmatica</i>	12	" "	H		S.E. Europe
<i>repens</i>	12	Tjebbes 1928	H		Europe
<i>reticulata</i> & 32 spp.	12	Heitz 1927	H		Port., N. Africa
<i>vulgaris</i> Toadflax	12	Vaarama, L. & L. '48	M		Eur., Caucasus
<i>triphylla</i>	12, 14	East 1933	H		Medit.
<i>panicci</i>	16	Heitz 1927	—		Macedonia
<i>chalepensis</i>	24	" "	—		S. Eur., S.W. Asia
CHAENORRHINUM (LINARIA) $x = 7$					
<i>minus</i>	14	Champagnat 1952	—		Eur., W. Asia
<i>organifolium</i>	14	" "	—		Iber. Penin.
<i>littorale</i>	{ 14	Heitz 1927	—		E. Medit.
	42	Champagnat 1952	—		
COLLINSIA $x = 7$					
<i>bartsiaefolia</i>	c. 14	Hiorth 1933	—		California
<i>bicolor</i>	14	" "	H		"
<i>v. candidissima</i>	14	Sugiura 1936b	H		"
<i>barts. × bicolor</i>	(21, 28)	Hiorth 1933	—		expt.
DOPATRIUM $x = 7$					
<i>lobelioides</i>	14	Raghavan & S. 1942	—		India
HEBENSTRETIA $x = 7$					
<i>dentata</i>	14	Sugiura 1939	H		S. Africa
<i>virgata</i>	14	" 1940	—		"
ERINUS $x = 7$					
<i>alpinus</i>	{ 14	Reese 1953	H		S. Eur., N. Afr.
	14	Favarger 1953	H		
CYMBALARIA (LINARIA) $x = 7$					
<i>muralis</i> Wall Ivy	14	Eichhorn 1950	—		Europe
<i>pallida</i>	14	Heitz 1927	—		Italy
<i>aequitriloba</i>	c. 42	Bruun 1932b	—		Corsica
<i>hepaticifolia</i>	c. 42	Heitz 1927	H		"
<i>pilosa</i>	42	Bruun 1932b	H		Italy
REHMANNIA $x = 7$					
<i>angulata</i>	28	Sugiura 1936a	H		China
<i>glutinosa</i>	56	Suzuka & K. 1949	H		"
STEMODIA $x = 7$					
<i>viscosa</i>	42	Raghavan & S. 1942	—		Ind., Afghan.

VANDELIA $x = 7$		42	Raghavan & S. 1940b	—	Tropics
<i>crustacea</i>					
DIGITALIS $x = (7) 28$					
<i>ambigua</i>	Yellow F.	56	Buxton & N. 1928	H	S. Europe
<i>canariensis</i>		56	Haase-Bessel, T. '31	—	Canary Is.
<i>dubia</i>		56	Regnart 1935	H	Balearics
<i>nervosa</i>		56	Buxton & D. 1934	—	Cauc., Persia
<i>orientalis</i>		56	" "	H	Greece, Asia M.
<i>purpurea</i>	Foxglove	56	Buxton & N. 1928	HM	Europe
<i>lanata</i>	Grecian F.	56	Buxton & D. 1934	M	Danube
<i>viridiflora</i>		56	Buxton & N. 1928	—	Greece, Maced.
<i>ferruginea</i>		{ 56	Buxton & D. 1934	H	S. Eur., Asia M.
		70	Yakar 1945		
<i>eristachya</i>		112	Buxton & D. 1934	—	S. Europe
<i>lutea</i>		112	" "	H	"
<i>obscura</i>		112	" "	H	Spain
<i>mertonensis</i> (purp. \times <i>ambigua</i>)		112	" 1932	H	cult
MIMULUS (DIPLACUS) $x = 7, 8$					
<i>cardinalis</i>	Monkey Flower	16	Sugiura 1940	H	W: U.S.A.
<i>betonicifolia</i>		32	" "	—	Chile
<i>guttatus</i> (<i>langsдорffii</i>)		{ 28	Clausen <i>et al.</i> 1950	H	W: N. America
		48	Maude 1940		
<i>tigrinus</i>		{ 48	Sugiura 1944	H	cult
		c. 64	Brozek 1932		
<i>quinquevulnerus</i> (<i>luteus</i>)		c. 64	" "	H	Chile
<i>tigrinoides</i>		c. 64	" "	H	cult
VERONICA * $x = 7, 8, 9, x_1 = 15, 17 x_2 = 26$					
$x = 7$					
<i>filiformis</i>		14	Lehmann 1944	H	Asia Minor
<i>humifusa</i>		14	Rutland 1941	—	N. & C. Europe
<i>polita</i> (<i>didyma</i>)		14	Beatus 1936	—	Eur., Sib., Africa
<i>repens</i>	& 4 spp.	14	Hofelich 1935	H	Corsica
<i>arvensis</i>	Field Speedwell	14, 16	Yamashita 1937	—	Eur., Asia, N. Afr.
<i>cardiocalpa</i> (<i>biloba</i>)		14, 16	Zündorf 1939	—	Himal., Cauc., Sib.
<i>agrestis</i>		{ 14, 28	Yamashita 1937	—	Eur., Asia, N. Afr.
		28	Wulff 1937b		
<i>biloba</i>		28	Zündorf 1939	—	Him., Cauc., Sib.
<i>opaca</i> (<i>agrestis</i>)		28	Beatus 1936	—	Eur., Asia, N. Afr.
<i>persica</i> (<i>tournefortii</i>)		28	" "	—	O.W. Temp.
<i>arguteserrata</i> (<i>biloba</i>)		42	Zündorf 1939	—	Him., Cauc., Sib.
<i>campylopoda</i>		42	" "	—	S.W. Asia
<i>hederifolia</i>		56	Hofelich 1935	—	Eur., S.W. & N. Asia
<i>longifolia</i>		70	S. & S. 1941	H	C.Eur.—N. Asia
$x = 8$					
<i>armena</i>	& 1 sp.	16	Brandt 1953	—	Armenia
<i>dillenii</i> (<i>verna</i>)		16	Hofelich 1935	—	Eur., S.W. & N. Asia
<i>fruticans</i>		16	Huber 1927	H	Eur., Greenland
<i>fruticulosa</i>		16	Beatus 1936	H	Eur. mtns.
<i>saturejoides</i>		16	Brandt 1952	H	Dalmatia
<i>verna</i>		16	Hofelich 1935	—	Eur., S.W. & N. Asia
<i>prostrata</i>		16, 32	Brandt 1953	H	Eur., N. Asia

VERONICA (cont.)

<i>chamaedrys</i>	Germander S.	32	L. & L. 1944b	H	Europe
<i>orbiculata (prostrata)</i>		32	Scheerer 1937	—	"
<i>austriaca</i>		32, 48	Brandt 1952	H	S.E. Europe
<i>gentianoides</i>		48	Scheerer 1937	H	Caucasus
<i>teucrium</i>		64	Lehmann 1944	H	
		68	Brandt 1952	H	Eur., N. Asia
<i>variegata</i>		64, 68	Graze 1933	H	
			Simonet 1934d	H	cult

$x = 9$

<i>alpina</i>		18	Favarger 1949b	H	Alps, Arctic
<i>anagalloides</i>		18	Schlenker 1936	—	Greece—Persia
<i>aphylla</i>		18	Brandt 1952	H	S. Europe
<i>beccabunga</i>	Brooklime	18	Schlenker 1936	—	N. Temp.
<i>crista-galli</i>		18	Hofelich 1935	—	Caucasus
<i>montana</i>		18	Simonet 1934d	—	Europe
<i>oxycarpa (anagallis)</i>		18	Schlenker 1936	—	N. Temp.
<i>praecox</i>		18	Hofelich 1935	—	Medit.
<i>scutellata</i>	Marsh S.	18	Hagerup 1944	—	Eur., N. Amer.
<i>stelleri</i>		18	Sakai 1935	—	Aleutians
<i>officinalis</i>	Common Sp.	18, 36	Bøcher 1944	HM	N. Temp.
<i>panormitana (cymbalaria)</i>		18, 36	Hofelich 1935	—	Medit., Asia M.
<i>americana</i>		36	Schlenker 1936	—	N. America
<i>anagallis-aquatica</i>		36	Ehrenberg 1945	—	N. Temp.
<i>catenata</i>		36	Schlenker 1936	—	Eur., N. Amer.
<i>onoel</i>		36	Yamazaki 1936	—	Japan
<i>wormskjoldii</i>		36	Bøcher & L. 1950	—	N. & Arctic

$x_3 = 15 (7 + 8)$

<i>sibthorpioides</i>		30	Hofelich 1935	—	France
-----------------------	--	----	---------------	---	--------

$x_3 = 17 (8 + 9)$

<i>longifolia (maritima)</i>		34, 68	Graze 1935	H	Eur., As. M., Sib.
<i>schmidtiana</i>		34	Sakai 1935	—	Sakhalin
<i>barrelieri (spicata) & 6 spp.</i>		34	Graze 1933	H	Eur., N. Asia
<i>plebeia</i>		34	Frankel unp.	—	E. Australia
<i>spicata</i>		34 (35, 36)	Brandt 1953	H	Eur., N. Asia
<i>spuria</i>		34	Graze 1933	H	Europe
<i>virginica</i>	Culvers Root	34	Huber 1927	HM	E: U.S.A.
<i>crassifolia</i>		68	Graze 1933	H	Balkans
<i>incana (candida)</i>		68	" "	H	S.E. Eur., N. Asia

$x_3 = 26 (8 + 9 + 9)$

<i>peregrina</i>		52	Hofelich 1935	—	Eur., N. Amer.
------------------	--	----	---------------	---	----------------

HEBE (VERONICA) * $x = 20, 21$

$x = 20$

<i>amplexicaulis & 25 spp.</i>		40	Frankel unp.	H	New Zealand
<i>diosmaefolia</i>		40	Frankel 1941	H	"
<i>lycopodioides</i>		40	Frankel & H. 1937	H	"
<i>mathewsii</i>		40	Simonet 1934d	H	"
<i>pimeleoides</i>		40	" "	H	"
<i>speciosa</i>		40	" "	H	"
<i>townsoni</i>		40	Frankel 1940	—	"
<i>vernicaosa v. canterburiensis</i>		40	Frankel & H. 1937	H	"
<i>v. gracilis</i>		42	" "	H	"
<i>leiophylla</i>		40, 80	Frankel unp.	H	"

HEBE (cont.)

<i>parviflora</i>	{ 40	Simonet 1934d	H	New Zealand
	80	Frankel 1940		
<i>salicifolia</i>	40	Frankel & H. 1937	H	"
<i>v. egmontiana</i>	80	Frankel unp.		
<i>traversii</i>	40, 80, 120	"	H	"
<i>buchanani</i>	80	"	H	"
<i>gigantea</i>	80	"	H	"
<i>macrocarpa</i>	80	"	H	"
<i>pinguifolia</i>	80	Frankel & H. 1937	H	"
<i>subalpina</i>	80, 120	Frankel unp.	—	"
<i>carsei</i> (5x)	100	"	—	"
<i>cockayneana</i>	120	"	—	"
<i>evenosa</i>	120	"	—	"
<i>laevis</i>	120	"	H	"
<i>montata</i>	120	Frankel & H. 1937	—	"
<i>x</i> = 21				
<i>cupressoides</i>	42	Frankel & H. 1937	H	"
<i>epacridea</i>	42	"	H	"
<i>formosa</i>	42	Frankel unp.	H	S.E. Austr., Tasm.
<i>hulkeana</i>	42	Simonet 1934d	H	New Zealand
<i>lavadiana</i>	42	Frankel unp.	H	"
<i>macrantha</i>	42	Frankel & H. 1937	—	"
<i>raoulii</i>	42	"	—	"
<i>salicornioides</i>	42	Frankel unp.	H	"
<i>tetrasticha</i>	42	Frankel & H. 1937	—	"
<i>buxifolia</i>	42	Frankel unp.	H	"
<i>v. odora</i>	84	Frankel & H. 1937		
<i>v. prostrata</i>	84	Frankel unp.		
<i>armstrongii</i>	124	"	H	"

PARAHEBE (VERONICA) *x* = 20, 21

<i>x</i> = 20				
<i>bidwillii</i>	40	Frankel & H. 1937	H	New Zealand
<i>x</i> = 21				
<i>canescens</i>	42	Frankel unp.	H	"
<i>catarractae</i>	42	"	H	"
<i>hookeriana</i>	42	"	H	"
<i>linifolia</i>	42	Frankel & H. 1937	H	"
<i>lyallii</i>	42	"	H	"

PYGMAEA *x* = 21

<i>ciliolata</i>	42	Frankel & H. 1937	—	New Zealand
<i>pulvinaris</i>	42	Frankel 1941	—	"
<i>thomsoni</i>	42	"	—	"

ANTIRRHINUM * *x* = 8 (no natural polyploids)

<i>glutinsum</i>	16	Baur 1932	H	Spain
<i>hispanicum</i>	16	"	H	"
<i>majus</i>	16	Propach 1935	H	Medit.
	(32)	Sparrow <i>et al.</i> 1942		
<i>molle</i>	16	Lawrence 1930	H	Pyrenees
<i>orontium</i>	16	Heitz 1927	H	Europe
<i>sempervirens</i>	16	Baur 1932	H	Pyrenees
<i>siculum</i>	16	"	H	Sicily
<i>tortuosum</i>	16	"	H	W. Medit.
	& 6 spp.			

PENSTEMON (PENTSTEMON, CHELONE) * $x = 8$

<i>albertinus</i>	& 9 spp.	16	Keck 1945	H	W: N. America
<i>barrettiae</i>		16	" "	H	Oregon
<i>barbatus</i>		16	Sugiura 1936b	H	Colorado
<i>cinereus</i>		16	Keck 1945	H	Oregon
<i>cyananthus</i>	& 14 spp.	16	Clausen <i>et al.</i> 1940	H	W: U.S.A.
<i>procerus</i>		16, 32	Keck 1945	H	W: N. America
<i>unicola</i>		16, 32	" "	—	" "
<i>wilcoxii</i>		16, 32	" "	H	N.W: U.S.Ä.
<i>nemorosus</i>		30!	Clausen <i>et al.</i> 1940	H	W: U.S.A.
<i>aggregatus</i>		32	" "	—	" "
<i>confertus</i>		32	Keck 1945	H	" "
<i>globosus</i>		32	" "	—	" "
<i>pratensis</i>		32	" "	—	" "
<i>rydbergii</i>		32	" "	H	" "
<i>shastensis</i>		32	" "	—	" "
<i>subseratus</i>		32	" "	—	" "
<i>azureus</i>		32, 48	J. Clausen 1933	—	California
<i>frutescens</i> !		40 (5x)	M. & S. 1935	—	Japan, Kamch.
<i>attenuatus</i>		48	Keck 1945	—	W: U.S.A.
<i>euglaucus</i>		48	" "	H	Oregon
<i>flavescens</i>		48	" "	—	W: U.S.A.
<i>cobaea</i>		64	Piotrowska, T. 1937	H	S.E: U.S.A.
<i>neotericus</i> (<i>laetus</i> × <i>azureus</i>)		64	J. Clausen 1933	—	California
<i>laevigatus</i>		96	La Cour 1931	—	S.E.: U.S.A

GRATIOLA $x = 8$

<i>officinalis</i>	32	Scheerer 1939	HM	Europe
--------------------	----	---------------	----	--------

TORENIA $x = 8, 9$

<i>asiatica</i>	16	Simon & L. 1930	H	S. India
<i>baillonii</i> (<i>flava</i>)	16	Sugiura 1936b	H	Indo-China
<i>peduncularis</i> (<i>edentula</i>)	18	Simon & L. 1930	H	India
<i>fournieri</i>	18 (36, 72)	Straub 1939	H	Indo-China

CALCEOLARIA $x = 8, 9, 30$

<i>angustifolia</i>	18	Srinath 1940	H	Chile
<i>banksii</i>	18	" "	H	<i>cult</i>
<i>cana</i>	18	La Cour 1945*	—	Chile
<i>clibranii</i>	18	Srinath 1940	H	<i>cult</i>
<i>crenatiflora</i>	18	La Cour 1945*	H	Chiloe Is.
<i>dentata</i>	18	" "	H	Chile
<i>integrifolia</i>	18	" "	H	"
<i>pratensis</i>	18	" "	H	"
<i>alba</i>	36	" "	H	"
<i>polyrrhiza</i>	36	" "	H	Patagonia
<i>hyssopifolia</i>	32	" "	H	Ecuador
<i>mexicana</i>	60	Srinath 1940	H	Mexico

ANARRHINUM (LINARIA) $x = 9$

<i>bellidifolium</i>	18	Heitz 1927	—	Medit.
<i>laxiflorum</i>	18	" "	—	Spain

ASARINA (ANTIRRHINUM) $x = 9$

<i>procumbens</i>	18	Heitz 1927	—	Italy
-------------------	----	------------	---	-------

DIASCIA $x = 9$					
<i>barbarea</i>		18	Propach 1934	H	S. Africa
NEMESIA * $x = 9$					
<i>strumosa</i>	& 7 spp.	18	Heitz 1927	H	S. Africa
<i>versicolor</i>		18	Propach 1934	H	"
<i>pulchella</i>	& 7 spp.	18	La Cour 1945*	H	"
KICKXIA (LINARIA, ELATINOIDES) $x = 7?, 9$					
<i>elatine</i>		{ 18	Brunn 1932b	H	Eur., Asia
		{ 36	Wulff 1939a		
<i>spuria</i>	& 1 sp.	c. 14	Heitz 1927	—	Eur., N. Africa
SCROPHULARIA $x = 9, 10, 13$					
<i>canina</i>		26	Rodrigues 1953	—	C. Eur., Medit.
<i>nodosa</i>	Figwort	36	Scheerer 1939	M	N. Temp.
<i>vernalis</i>		40	Håkansson 1926	—	C. & S. Eur. mtns.
<i>aquatica</i>	Water Betony	80	Maude 1940	M	W. Eur., N. Afr.
<i>umbrosa</i>		c. 52	Scheerer 1940	—	C. Eur., W. Asia
ANGELONIA $x = 10$					
<i>grandiflora (salicariaefolia)</i>		20	Raghavan & S. '40b	H	Brazil
<i>cubensis</i>		20	" "	H	Cuba
DIPLACUS $x = 10$					
<i>aridus</i>		20	McMinn 1951	H	S. California
<i>calycinus</i>		20	" "	—	California
<i>clevelandii</i>		20	" "	—	"
<i>fascicularis</i>		20	" "	—	"
<i>puniceus</i>		20	" "	H	S. California
LIMOSELLA $x = 10$					
<i>subulata</i>		20	Vachell & B. 1939	—	E: N. Amer., Wales
<i>aquatica</i>	Mudwort	40	" "	—	N. Temp.
(sub. \times aqu.)		30	" "	—	Glamorgan
RUSSELIA $x = 10$					
<i>juncea</i>		20	Raghavan & S. '40b	H	Mexico
<i>rotundifolia</i>		20	" "	H	"
SCOPARIA $x = 10$					
<i>dulcis</i>		40	Raghavan & S. '40b	—	Tropics
PAULOWNIA $x = 10$					
<i>tomentosa (imperialis)</i>		40	Westfall 1949	H	China, Japan
TETRANEMA $x = 10$					
<i>mexicana</i>	Mex. Foxglove	20	Sugiura 1940	H	Mexico
MAURANDIA (ANTIRRHINUM) $x = 10?, 12$					
<i>scandens (lophospermum)</i>		{ 20	Sugiura 1937a	H	Mexico
		{ 24	Heitz 1927		
<i>antirrhiniflora</i>		24	" "	H	S.W: U.S.A.
<i>barclatana</i>		24	" "	H	Mexico
<i>erubescens</i>		24	" "	H	"
<i>purpusii</i>		24	" "	H	"
<i>purpurea</i>		24	Sugiura 1937a	—	"

LAGOTIS $x = 11$					
<i>glauca</i>		22	Sakai 1934	H	Asia, N. Amer.
<i>takedana</i>		22	"	—	Japan
SYNTHRIS $x = 12$					
<i>reniformis</i>		24	MacMillan 1949	H	W: N. America
ILYSANTHES $x = 13$					
<i>parviflora</i>		26	Raghavan & S. 1941	—	India, Trop. Afr.
VERBASCUM $x = 15, 16, 18$					
<i>nigrum</i>	Dark Mullein	30	Håkansson 1926	HM	Eur., Caucasus
<i>blattaria</i>	Moth M.	30, 32	" "	H	Eur., W. & C. Asia, N. Africa
<i>chaixii</i>	Nettle-leaved M.	32	" "	H	S. & C. Europe
<i>lychnitis</i>	White M.	32	" "	H	Eur., W. Asia
<i>phlomoides</i>	Woolly M.	32	" "	H	S. & C. Eur., W. Asia
<i>pulverulentum</i>	Hoary M.	32	" "	H	Europe
<i>simplex</i>		32	Fernandes 1950b	H	S.W. Eur., N. Afr.
<i>thapsiforme</i>		32	Håkansson 1926	HM	Eur., N. Africa
<i>virgatum</i>		32	" "	H	Eur., A. Min., N. Africa
<i>phoeniceum</i>	Purple M.	{ 32 36	M. & S. 1935 Lawrence 1931	H	E. Eur., W. Asia
<i>thapsus</i>	Aaron's Rod	34, 36	Håkansson 1926	H	Eur.—Himal.
<i>ternacha</i>		48	" "	—	Abyssinia
<i>maurum</i>		64	" "	—	Morocco
CELSIA $x = 17, 20, 23, 24, 25, 26$					
<i>bugulifolia</i>		34	Håkansson 1926	H	S.E. Europe
<i>pontica</i>		34	" "	H	Armenia
<i>horizontalis</i>		40	" "	—	Crete
<i>roripifolia</i>		c. 42	" "	—	Thrace
<i>battandieri</i>		c. 46	" "	—	Morocco, Alg.
<i>brevipedicellata</i>		46	" "	—	E. Trop. Africa
<i>faurei</i>		46	" "	—	Algeria
<i>keniensis</i>		46	" "	—	Abyss., Kenya
<i>arcturus</i>		48	" "	H	Crete
<i>orientalis</i>		48	" "	H	Levant
<i>rupestris</i>		48	" "	—	Thrace
<i>maroccana</i>		50	" "	—	Morocco
<i>cretica</i>		52	" "	H	Medit.
<i>lyrata</i>		52	" "	—	"

(2) PARASITIC GROUP

RHINANTHUS (ALECTOROLOPHUS) * $x = 7$					
<i>minor</i> & 5 spp.	Penny Grass	14	Witsch 1932	Par	Europe
<i>major</i> (serotinus)	Yellow Rattle	14 + 8B	Wulff 1939a	Par	"
PEDICULARIS * $x = 6, 8$					
<i>verticillata</i>		12	Favarger 1953	Par	Arctic, Alps
<i>amoena</i>	& 2 spp.	16	S. & S. 1938	Par	Altai
<i>foliosa</i>	& 2 spp.	16	Witsch 1932	Par	Europe
<i>sylvatica</i>	Lousewort	16	L. & L. 1944b	Par	"
<i>flammea</i>	& 3 spp.	16	L. & L. 1948	Par	"

PEDICULARIS (cont.)				
<i>palustris</i>	16	Reese 1953	Par	Europe
MELAMPYRUM * $x=9$				
<i>nemorosum</i>	18	Reese 1952a	Par	Eur., Caucasus
<i>pratense</i> & 2 spp. Cow Wheat	18	Witsch 1932	Par	Eur., N. Asia
SOPUBIA $x=9$				
<i>delphinifolia</i>	36	K. Iyengar 1937	Par	India
ODONTITES $x=10$				
<i>lutea</i>	20	Witsch 1932	Par	Eur., Asia M.
<i>verna (rubra)</i>	{ 20 40	{ Fagerlind 1937 Witsch 1932	{ Par Par	{ Eur. Europe
TOZZIA $x=10$				
<i>alpina</i>	20	Witsch 1932	Par	Europe
STRIGA $x=10$				
<i>densiflora</i>	40	Kumar & A. 1941	Par	India
<i>euphrasioides</i>	40	" "	Par	"
<i>lutea</i>	40	" "	Par	Trop. Asia & Afr.
<i>orobanchoides</i>	40	" "	Par	India, Trop. Afr.
EUPHRASIA * $x=11$				
<i>montana</i>	22	Witsch 1932	Par	W. Europe
<i>rostkoviana</i> Eyebright	22	" "	MPar	Europe
<i>anglica</i>	22	Yeo 1954	Par	Britain
<i>hirtella</i>	22	" "	Par	Eurasia
<i>rivularis</i>	22	" "	Par	Britain
<i>frigida</i>	44	L. & L. 1948	Par	Arctic, Subarctic
<i>minima</i>	44	Witsch 1932	Par	C. & S. Europe
<i>salisburgensis</i>	44	" "	Par	Europe
<i>curta</i> & 7 spp.	44	Yeo 1954	Par	Eur., Quebec
<i>brevipila</i>	44, 45	" "	Par	N. & Alp. Eur., N.E.: N. Amer.
<i>confusa</i> Eyebright	44	" "	Par	Britain
<i>stricta</i>	44	Reese 1952a	Par	Europe
BARTSIA (BARTSCHIA) $x=12, 14$				
<i>alpina</i>	{ 24 36 28	{ Favarger 1953 Doulat 1946 Bøcher & L. 1950	Par	Eur., N. Amer.
CASTILLEJA $x_1=11+12$				
<i>arctica</i>	46	S. & S. 1941	Par	Arctic

253 OROBANCHACEAE

OROBANCHE $x=(6) 12, 18, 19, 20$				
<i>ramosa</i>	24	Gardé 1952a	Par	Eur., Cauc., W. Asia
<i>uniflora</i>	36, 72	Jensen 1951	Par	E: N. America
<i>aegyptica</i>	38	Srivastava 1939	Par	Egypt
<i>crenata</i>	38	Gardé 1952a	Par	Arabia

OROBANCHE (cont.)

<i>lucorum</i>		38	Palmgren 1943	Par	C. Europe
<i>minor</i>	Broomrape	38	Carter 1928	Par	Eur., N. Africa
<i>reticulata</i>		38	Favarger 1953	Par	C. & S. Europe
<i>coerulescens</i>		38, 40	Sugiura 1936b	Par	Eur., N. Asia
<i>ammophila</i>		40	„ „	Par	„ „

PHACELLANTHUS $x = 19$

<i>tubiflorus</i>		38, 57, 76	Matsuura & T. 1937	Par	Japan
-------------------	--	------------	--------------------	-----	-------

CISTANCHE $x = 20$

<i>phellipaea</i>		40	Gardé 1952a	Par	Medit.
-------------------	--	----	-------------	-----	--------

LATHRAEA $x = ?$

<i>squamaria</i>	Toothwort	36, 42	T. 1930, 1935	Par	Eur., N. Asia
<i>clandestina</i>		42	Dangeard 1937	Par	S. Europe

254 LENTIBULARIACEAE

PINGUICULA $x = 16$

<i>alpina</i>		{ 32	L. & L. 1944b	C	Europe
		{ 32	Doulat 1947		
<i>grandiflora</i>		32	„ „	C	W. Europe
<i>vulgaris</i>	Butterwort	64	„ „	HC	Eur., N. Asia, N. America

UTRICULARIA $x = ?$

<i>minor</i>		36-40	Reese 1952a	C	Eur., N. Asia, N. America
<i>neglecta</i>		36-40	„	C	Europe
<i>ochroleuca</i>		c. 40	„	C	„
<i>vulgaris</i>	Bladderwort	36-40	„	CH	Eur., N. Asia, & America

256 GESNERIACEAE

NAEGELIA (GESNERIA) $x = 12$

<i>zebrina</i>		24	Sugiura 1936b	—	Brazil
----------------	--	----	---------------	---	--------

CORYTHOLOMA (GESNERIA) $x = 14$

<i>cardinalis</i>		28	Sugiura 1936b	H	Trop. America
-------------------	--	----	---------------	---	---------------

SAINTPAULIA $x = 14$

<i>ionantha</i>	African Violet	28	Sugiura 1936b	H	Trop. Africa
<i>kewensis</i>	„ „	28	Holzer 1952	H	„

SINNINGA (GLOXINIA) $x = 14$

<i>speciosa</i>	Gloxinia	56	Sugiura 1936b	H	Brazil
-----------------	----------	----	---------------	---	--------

STREPTOCARPUS * $x = 15, 16$

(i) $x = 15$: Stemmed Group

<i>caulescens</i>		30	Lawrence <i>et al.</i> 1939	—	Trop. E. Africa
<i>holstii</i>		30	„ „	—	„ „
<i>kirkii</i>		30	„ „	—	„ „
<i>orientalis</i>		30	„ „	—	Siam
<i>saxorum</i>		30	„ „	—	Trop. E. Africa

STREPTOCARPUS (cont.)

(ii) $x = 16$: Stemless Group

<i>insignis</i>	32	Lawrence 1945*	—	E. Cape Prov.
<i>polackii</i>	32	" "	—	Transvaal
<i>dunnii</i>	32	Lawrence <i>et al.</i> 1939	H	"
<i>rexii</i> & 15 spp.	32	" "	H	Cape Prov.
<i>saundersii</i>	32	Sugiura 1940	—	Natal
<i>kewensis</i> \times <i>grandis</i>	32, 64	Lawrence 1945*	H	<i>cult</i>
<i>veitchii</i>	32	Sugiura 1940	H	<i>cult</i>

CHIRITA (DIDYMOCARPUS) $x = 18$

<i>lavandulacea</i>	36	Sugiura 1940	H	Malaya
---------------------	----	--------------	---	--------

DIDYMOCARPUS $x = 18?$

<i>tomentosa</i>	54	Thathachar 1942	—	India
------------------	----	-----------------	---	-------

RAMONDA $x = 18$

<i>nathaliae</i>	36	Glišić, T. 1927	H	Balkans
<i>serbica</i>	72	" "	H	"

257 BIGNONIACEAE

INCARVILLEA $x = 11$

<i>compacta</i>	{ 18?	Sugiura 1936b	H	China
	22	Bowden 1940a		
<i>delavayi</i>	{ 18?	Sugiura 1936b	H	W. China, Tibet
	22	Bowden 1940a		
<i>grandiflora</i>	22	" "	H	W. China
<i>olgae</i>	22	" "	H	Turkestan

SPATHODEA $x = 13$

<i>campanulata</i> Scarlet Bell	26	Raghavan & V. '40c	MHSh	Trop. Africa
<i>nilotica</i>	26	Venkatasubban 1945a	H	"

ARGYLIA $x = 15$

<i>uspallatensis</i>	30	Covas & S. 1946	—	Chile
----------------------	----	-----------------	---	-------

MILLINGTONIA $x = 15$

<i>hortensis</i> Indian Cork T.	30	Narasinga Rao 1936	HW	Burma
---------------------------------	----	--------------------	----	-------

OROXYLUM $x = 15$

<i>indicum</i>	30	Venkatasubban 1944	DM	India
----------------	----	--------------------	----	-------

TECOMARIA (TECOMA) $x = 17$

<i>capensis</i>	34	Venkatasubban 1944	H	S. Africa
-----------------	----	--------------------	---	-----------

JACARANDA $x = 18$

<i>coerulea</i>	36	Simmonds 1954	H	W. Indies
<i>ovalifolia</i> Jacaranda	36	Venkatasubban 1944	HSh	Brazil
<i>as mimosaefolia</i>	66	Pathak <i>et al.</i> 1949		

TECOMA $x = 18?, 19?$

<i>smithii</i> Austr. Trumpet Bush	36	Venkatasubban 1944	H	<i>cult</i>
<i>chrysantha</i>	38	" "	H	Venezuela

CAMPSIS (TECOMA) $x = 18?, 19?, 20$					
<i>chinensis</i> (<i>grandiflora</i>)	{ 36, 38 40 40	Venkatasubban 1944 Sax 1933b, Bowden 1945a	H		China, Japan
<i>radicans</i> Trumpet Vine	{ 40 40	Sax 1933b Venkatasubban 1944	H		E: U.S.A.
<i>tagliabuana</i> (<i>grand.</i> \times <i>rad.</i>)	40	Vilmorin & S. '27a	H		<i>cult</i>
PANDOREA (TECOMA) $x = 19$					
<i>jasminoides</i>	38	Nakajima 1936	H		Australia
PSEUDOCALYMMA $x = 19$					
<i>macrocarpum</i>	38	Simmonds 1954	—		Cent. Amer.
ADENOCALYMMA $x = 20$					
<i>calycina</i>	40	Venkatasubban 1944	—		Brazil
ANEMOPAEGMA (BIGNONIA) $x = 20$					
<i>chamberlaynii</i>	40	Venkatasubban 1944	H		Brazil
ARRABIDAEA (BIGNONIA) $x = 20$					
<i>magnifica</i>	40	Venkatasubban 1944	H		Colombia
BIGNONIA $x = 20$					
<i>capreolata</i> Cross Vine	40	Bowden 1940a	H		S.E: U.S.A.
<i>megapotamica</i>	40	Venkatasubban 1944	—		Brazil
<i>unguis-cati</i> Cats' Claw	{ 40, 80 80	" " '45a Bowden 1945a	H		W. Indies—Arg.
(<i>tweediana</i>)					
CALLICHLAMYS $x = 20$					
<i>latifolia</i>	40	Simmonds 1954	—		Brazil, Peru
CATALPA $x = 20$					
<i>bignonioides</i> Indian Bean	40	E. C. Smith 1941	HShW		S.E: U.S.A.
<i>ovata</i>	40	" "	H		China
<i>speciosa</i>	40	" "	HW		C: U.S.A.
<i>hybrida</i>	40	" "	H		<i>cult</i>
CHILOPSIS $x = 20$					
<i>linearis</i> Desert Willow	40	Bowden 1945a	H		S: U.S.A., Mex.
CLYTOSTOMA (BIGNONIA) $x = 20$					
<i>binatum</i> (<i>purpureum</i>)	40	Venkatasubban 1944	H		Uruguay
CRESCENTIA $x = 20$					
<i>cujete</i> Calabash Tree	40	Simmonds 1954	HTo		Trop. America
<i>latifolia</i>	40	" "	—		" "
CYDISTA (BIGNONIA) $x = 20$					
<i>diversifolia</i>	40	Venkatasubban 1944	H		Mexico
DOLICHANDRONE $x = 20$					
<i>rheedii</i>	40	Venkatasubban 1944	—		India, Malaya
<i>stipulata</i>	40	" "	—		Burma
HETEROPHRAGMA $x = 20$					
<i>adenophyllum</i>	40	Venkatasubban 1945a	—		India

KIGELIA $x = 20$					
<i>pinnata</i>	Sausage Tree	40	Simmonds 1954	MSH	Trop. Africa
MARKHAMIA $x = 20$					
<i>hildebrandia</i>		40	Venkatasubban '45a	H	Trop. Africa
<i>platycalyx</i>		40	„ „	H	Uganda
PAJANELIA $x = 20$					
<i>multijuga (rheedii)</i>		40	Venkatasubban 1944	—	India, Burma
PARAGONIA (BIGNONIA) $x = 20$					
<i>pyramidata</i>		40	Simmonds 1954	—	Brazil
PARMENTIERA $x = 20$					
<i>cereifera</i>	Candle Tree	40	Simmonds 1954	H	Panama
<i>edulis</i>	Guajilote	40	Venkatasubban '45a	F	Mex., Guat.
PHAEDRANTHUS (BIGNONIA) $x = 20$					
<i>cherere</i>		40	Venkatasubban 1944	H	Mexico
PHYLLARTHON $x = 20$					
<i>comorensis</i>		40	Venkatasubban 1944	—	Madagascar
PHRYGANOCYDIA $x = 20$					
<i>corymbosa</i>		40	Simmonds 1954	—	E: S. America
STENOLOBIUM (BIGNONIA) $x = 20$					
<i>stans</i>	Yellow Bells	40	Bowden 1945a	H	W. Indies—Peru
STEREOSPERMUM $x = 20$					
<i>chelonoides</i>		40	Venkatasubban 1944	W	India, Burma
<i>suaveolens</i>		40	„ „	HW	India
<i>xylocarpum</i>		40	„ „	W	„
TABEBUIA (TECOMA) $x = 20$					
<i>guyacan</i>		40	Venkatasubban 1944	—	Panama
<i>ipe</i>	Lapacho	40	Covas & S. 1947	W	Paraguay
<i>nodosa</i>		40	„ „	—	Argentine
<i>pallida</i>	White Cedar	40	Simmonds 1954	HW	W.I., C. Amer.
<i>rosea</i>		40	Venkatasubban 1944	H	Mex.—Ecuador
<i>serratifolia</i>	Yellow Poui	{ 38 ?	„ „ '45a	HW	W. Indies
<i>spectabilis</i>		{ 40	Simmonds 1954		
		40	Venkatasubban '45a	H	Colombia
TANAECIUM $x = 20$					
<i>jaroba (albiflorum)</i>		40	Venkatasubban 1944	—	Trop. America
AMPHILOPHIUM $x = 22$					
<i>mutisii</i>		44	Venkatasubban 1944	—	W. Indies

258 PEDALIACEAE

PEDALIUM $x = 8$					
<i>murex</i>	Burra Gokeru	16	Srinivasan 1942	M	India, Trop. Afr.

SESAMUM	$x = 8, 13.$	$x_s = 8 + 8 + 13 = 29$			
<i>alatum</i>		26	Kedarnath 1950	V	S. Africa
<i>capense</i>		26	Shimamura 1951	—	"
<i>orientale (indicum)</i>	Sesame	26	Raghavan & K. 1947	OMV	India, <i>cult</i>
		(52)	Richharia & P. 1940		
<i>laciniatum</i>		{ 28	Raghavan & K. 1945	—	India
		{ 32	Ramanujam & J. 1948	—	
<i>angolense</i>		32	Kedarnath 1950	—	Trop. Africa
<i>prostratum</i>		32	Raghavan & K. 1947	—	India
<i>occidentale</i>		64	Sampath & R. 1949	—	"
<i>radiatum</i>	Black Beniseed	64	John & R. 1941	OV	Trop. Africa
<i>indicatum (orient. × prost.)</i>		29 (58)	Raghavan & K. 1947	O	<i>expt.</i>

CERATOTHECA	$x = 8$				
<i>sesamoides</i>		32	Kedarnath 1950	OV	Trop. Africa

PROBOSCIDEA (MARTYNIA)	$x = 15$				
<i>jussieui</i>	Unicorn Plant	30	Sugiura 1936b	HV	S: U.S.A.
as <i>M. louisiana</i>		30	Martini 1939		
as <i>M. fragrans</i>		30	Gaiser <i>et al.</i> 1943		

IBICELLA (PROBOSCIDEA)	$x = ?$				
<i>lutea</i>		{ 30	Martini 1939	HV	Argentina
		{ 32	Covas & S. 1947		

MARTYNIA	$x = 18$				
<i>annua (diandra)</i>		36	Srinivasan 1942	V	Trop. Amer.

259 ACANTHACEAE

THUNBERGIA	$x = 7, 8, 9$				
<i>alata</i>	Black-eyed Susan	{ 18	Grant 1955	H	Tr. Afr., E. Ind.
		{ 32	Snod 1952		
<i>grandiflora</i>		{ c. 28	E.K.J.*	H	India, Burma
		{ 56	Snod 1952		
<i>laurifolia</i>		56	Sugiura 1936b	H	Malaya

HYGROPHILA	$x = 12, 16$				
<i>spinosa</i>	Nirmulli, Water Jasmine	{ 24	Sugiura 1940	(M)	E. Ind., Malaya
		{ 32	Rangaswamy 1941		

JUSTICIA	$x = 14$				
<i>debilis</i>		28	Sugiura 1936a	H	Arabia
<i>furcata</i>		28	" "	H	Mexico

JACOBINIA*	$x = 14$				
<i>carnea</i> & 2 spp.		28	Grant 1955	H	Brazil

RUELLIA*	$x = 16, 17, 18$				
<i>tuberosa</i>	Menow-weed	{ 32	Sugiura 1936b	H(R)	Trop. N. Amer.,
		{ 34	Bowden 1940a		Jamaica
<i>ciliosa</i>		34	" "	H	E: U.S.A.
<i>malacosperma</i>		34	" "	H	C. America
<i>nudiflora</i>		34	" "	H	S: U.S.A., Mex.
<i>strepens</i>		34	" "	H	E: U.S.A.
<i>graecizana</i> & 18 spp.		34	Grant 1955	H	S. America

RUELLIA (cont.)				
<i>ciliata</i>	36	Sugiura 1936b	—	India, Burma
<i>squarrosa (dipteracanthus)</i>	34	Grant 1955	—	Mexico
ADHATODA (JUSTICIA) $x = ?$				
<i>vasica</i>	{ 34 56	Mukherjee 1952b	HDIM	India, Malaya
		Grant 1955		
DICLIPTERA $x = 20$				
<i>resupinata</i>	40	Sugiura 1939	—	Mexico
ERANTHEMUM (DAEDALACANTHUS) $x = 21$				
<i>pulchellum (nervosus)</i>	42	Pathak <i>et al.</i> 1949	H	India
<i>variegatum</i>	42	„ „	H	<i>cult</i>
ACANTHUS $x = ?$				
<i>mollis (lusitanicus)</i>	56	Sugiura 1936b	H	S. Europe
	56	„ 1939		
<i>spinosus</i>	{ 80 112	Drahowzal 1936	H	„
		Sugiura 1937b		
ELYTRARIA $x = ?$				
<i>virgata</i>	50	Grant 1955	H	S.E. U.S.A.
SANCHESIA $x = ?$				
<i>nobilis</i>	136	Singh 1951	H	Ecuador

260 GLOBULARIACEAE

GLOBULARIA $x = 8, 10$				
<i>vulgaris</i>	16	L. & L. 1944b	H	S. Eur., Cauc.
<i>cordifolia</i> Globe Daisy	20	Sugiura 1937a	H	S. Europe

262 SELAGINACEAE

HEBENSTRETIA $x = 7$				
<i>comosa</i>	14	Sugiura 1936b	H	S. Africa
<i>dentata</i>	14	„ „	—	„

263 VERBENACEAE

DIOSTEA $x = 5$				
<i>scoparia</i>	20	Covas & S. 1946	—	Chile, Arg.
JUNELLIA $x = 5$				
<i>asparagoides</i>	20	Covas & S. 1946	—	Chile, Arg.
<i>glauca</i>	20	„ 1947	—	„
<i>seriphoides</i>	20	Schnack & C. 1947	—	„
<i>aspera</i>	60	Covas & S. 1946	—	Chile, Arg., Peru
VERBENA (incl. GLANDULARIA) * $x = 5, 7$				
<i>dissecta</i>	10	Schnack 1944	—	S. America
<i>flava</i>	10	Schnack & C. 1944	—	Argentine

VERBENA (cont.)

<i>grandiflora</i>		10	Dermen 1936a	—	Cuba
<i>laciniata (erinoidea)</i>		10	Schnack & C. 1944	—	S. America
<i>megapota mica</i>		10	Schnack & G. 1945	—	Brazil—Arg.
<i>mendocina</i>		10	Schnack & C. 1945b	—	Argentine
<i>parodii</i>		10	Covas & S. 1944	—	"
<i>perakii</i>		10	" "	H	"
<i>peruviana</i>		10 (20)	Schnack & C. 1945a	H	S. Braz., Peru, Ur.
<i>phlogiflora</i>		10	Schnack 1944	—	S. America
<i>platensis (teucroides)</i>		10	Noack 1937	—	"
<i>radicans</i>		10	Beale 1940	—	Chile, Arg.
<i>santiaguensis</i>		10	Schnack & G. 1945	—	Arg., Uruguay
<i>hybrida</i>	Garden V.	10	Beale 1940	H	<i>cult</i>
		20 (40)	Furusato 1940		
<i>crithmifolia</i>		20	Covas & S. 1945	—	Ecuador, Arg.
<i>hookeriana</i>		20	" "	—	Argentine
<i>ambrosifolia</i>		30	Dermen 1936a	—	N. America
<i>canadensis</i>	Clump V.	30	" "	—	N. & S. Amer.
<i>racemosa</i>		30	" "	—	N. America
<i>tenera</i>	Italian V.	30	Beale 1940	H	S. Braz.—Arg.
x = 7					
<i>officinalis</i>	Vervain & 10 spp.	14	Dermen 1936a	H	Temp.
<i>bonariensis</i>		28	" "	H	N. & S. Amer.
<i>intermedia</i>		28	Schnack & C. 1944	—	Brazil—Arg.
<i>littoralis</i>		28	Dermen 1936a	—	Temp. & Tr. Am.
<i>gracilescens</i>		42	Schnack 1944	—	Bolivia—Arg.
<i>montevideensis</i>		42	Schnack & C. 1947	—	Uruguay
<i>rigida (venosa)</i>		42	Dermen 1936a	H	N. & S. Amer.
<i>corymbosa</i>		56	Noack 1937	H	S. America
sp. aff. <i>intermedia</i>		56	Schnack & C. 1947	—	Chile
<i>ovata</i> ($x_2 = 5 + 7 ?$)		72	Noack 1937	—	Brazil, Arg.
PRIVA x = 6					
<i>lappulacea</i>		12	Patermann, T. 1938	—	Trop. America
VITEX x = 6, 8					
<i>agnus-castus</i>	Chaste Tree	24	Patermann, T. 1938	H	Temp. & Sub.-Tr.
<i>trifolia</i>		32	Sugiura 1936a	M	Trop. Asia, Austr., E. Africa
PHRYMA x = 7					
<i>leptostachya</i>		14	Sugiura 1936b	—	N. Asia, Himal.,
		28	D. C. Cooper 1941		N America
NEOSPARTON x = 8					
<i>ephedroides</i>		32	Covas 1950c	—	Chile, Arg.
CALLICARPA x = 8?, 9?					
<i>japonica</i>		16	Sugiura 1936b	H	E. Asia
		18	Patermann, T. 1938		
LIPPIA x = 8?, 9?					
<i>junceae (bailloniana)</i>		32	Junell 1934	—	Chile
<i>citriodora</i>	Lemon Verbena	36	Doulat, D. 1951	H	Chile, Arg.
<i>nodiflora</i>		36	Junell 1934	HM	O.W. Tropics

LANTANA $x = 8, 11$					
<i>camara</i>	{	32 Schnack & C. 1947	FHM	Tropics	
<i>polyacantha</i>		44 Tjio 1948, Singh 1951			
<i>trifolia</i>		44 "			
	48	Patermann, T. 1938	H	Tr. Amer. & Asia	
ACANTHOLIPPIA $x = 9$					
<i>seriphioides</i>	36	Covas & S. 1947	—	Argentina	
ALOYSIA $x = 9$					
<i>ligustrina</i>	36	Covas & S. 1946	H	Texas—Arg.	
PHYLA $x = 9$					
<i>nodiflora</i>	36	Covas & S. 1946	—	Trop. & Sub-Tr.	
CASTELIA $x = 11$					
<i>cuneato-ovata</i>	44	Covas & S. 1946	—	S. America	
CLERODENDRON $x = 12, 23?$					
<i>fargesii</i>	24	Patermann, T. 1938	H	China	
<i>speciosissimum</i>	48	Bowden 1945b	H	Tropics	
<i>thomsoniae</i>	{	46 Nishiyama & K. '42	H	"	
		c. 48 Bowden 1945b	H	"	
<i>trichotomum</i>	c. 46, c. 92	Bowden 1940a	H	China, Jap., Phil.	
<i>kaempferi</i>	60	Bowden 1945b	—	E. Trop. Asia	
<i>bungei</i>	108	" "	H	Tr. Amer., China	
DURANTA $x = 12?$					
<i>repens</i> (<i>plumieri</i>)	Pigeon Berry	36	Patermann, T. 1938	H	Tropics
STACHYTARPHETA $x = ?$					
<i>cayennensis</i>	48	Patermann, T. 1938	—	Tr. Amer., Afr.	
<i>angustifolia</i>	56	Junell 1934	—	"	
<i>dichotoma</i>	c. 112	" "	H	Trop. America	

264 LABIATAE

DRACOCEPHALUM $x = 5, 7$					
<i>imberbe</i>	10	S. & S. 1938	H	Altai	
<i>moldavica</i>	20	Panutina-M. 1933	H	Sib., Himal.	
<i>altaense</i>	14	S. & S. 1938	H	Altai	
<i>ruyschiana</i>	14	L. & L. 1944b	H	Eur., Siberia	
STACHYS (BETONICA) $x = 5, 8$					
<i>arvensis</i>	Woundwort	10	Lang 1940	M	Eur., N. Africa
<i>officinalis</i>	Betony	16	" "	M	Eur., Asia Min.
<i>grandiflora</i>		32	Lewitzky 1940	—	Asia M., Persia
<i>sylvatica</i>	Clownwort	{ 48	L. & L. 1942	M	Himal., N. Asia
		{ 66	Lang 1940		
<i>palustris</i>	Marsh Betony	{ c. 64	Wulff 1938	M	N. Temp.
		{ 102	Lang 1940		
TEUCRIUM $x = 5, 8, 13$					
<i>botrys</i>		10	Junell 1934	—	Eur., Algeria
<i>arduini</i>		32	" "	—	S. Europe

TEUCRIUM (cont.)						
<i>flavum</i>		32	Junell 1934	—		Medit.
<i>scorodonia</i>	Wood Sage	{ 32	Scheerer 1940	H		W. Europe
		34	Rutland 1941			
<i>chamaedrys</i>		64	Reese 1952a	H		Eur., S.W. Asia, Morocco
<i>polium</i>		26	Lorenzo-A. & G. '50	—		Medit., S.W. Asia
SATUREIA $x=5?$						
<i>montana</i>	Winter Savory	30	Vaarama 1947a	HSp		S. Eur., Cauc.
<i>hortensis</i>	Summer Savory	{ 45	" "	HSp		Medit., S.W. Asia
		48	Mechelke 1954			
HORMINUM $x=6$						
<i>pyrenaicum</i>		12	Favarger 1953	—		S. Eur. mtns.
HYSSOPUS $x=6$						
<i>officinalis</i>	Hyssop	12	Reese 1952a	DSp		Eurasia
PLECTRANTHUS $x=6$						
<i>japonicus</i>		24	Suzuka 1950	M		O.W. Tropics
ROSMARINUS $x=6$						
<i>officinalis</i>	Rosemary	24	Scheel 1931	Sp		Medit.
COLEUS $x=6, 7, 8$						
<i>blumei</i>		24	Furusato 1940	H		Java, <i>cult</i>
garden forms		48, 49, 72	Reddy 1952			
<i>laciniatus</i>		48	" "	—		"
<i>forskohlii</i>		28	" "	—		India
<i>aromaticus (amboinicus)</i>		32	Scheel 1931	M		"
<i>rehneltianus</i>		c. 48	" "	—		Ceylon
PHLOMIS $x=6, 10, 11$						
<i>lychnitis</i>	Lampwick Pl.	20	Wagner 1948	H		S. Europe
<i>purpurea</i>		20	" "	—		Spain, Portugal
<i>tuberosa</i>		22	Reese 1953	—		S. Eur., E. & N. Asia
<i>alpina</i>		24	S. & S. 1938	H		Siberia
THYMUS $x=6, 7, 9$						
<i>serpyllum</i>	Mother of T.	24	Pigott 1954	Sp		Eur., Asia, N. Afr.
<i>alpestris</i>		28	Jalas 1948	—		C. Europe
<i>comosus</i>		28	" "	H		S.E. Europe
<i>marschallianus</i>		28	" "	H		S.E. Eur., Cauc.
<i>pulegioides</i>		28	Pigott 1954	H		Europe
<i>zhiguliensis</i>		28	Jalas 1948	—		C. Asia
<i>caespititius</i>		30	" "	H		Pyrenees
<i>vulgaris</i>	Common Thyme	30	Vaarama 1947a	HMSp		S. Eur., N. Asia
<i>citriodorus</i>		42	" "	H		<i>cult</i>
<i>drucei</i>	Mother of Thyme	54	Jalas 1948,	Sp		N. & Arctic
(<i>serpyllum, arcticus</i>)		50-56	Pigott 1954			
<i>hirsutus (doerfleri)</i>		54	Vaarama 1947a	—		Balkans
<i>pallasianus (odoratissimus)</i>		54	" "	H		S. Russia
<i>longidens (lanicaulis)</i>		58	" "	H		Balkans

MONARDA $x = 6, 8, 9$					
<i>punctata</i>	Am. Horse Mint	24	Bushnell 1936	M	N. America
<i>didyma</i>	Bee Balm	32	" "	H	E: N. America
<i>fistulosa</i>	Am. Bergamot	$\begin{cases} 32 \\ 36 \end{cases}$	$\begin{cases} " \\ \text{Suzuka \& K. 1949} \end{cases}$	HSp	W: N. America

MENTHA $x = 6, 9, 10$					
<i>arvensis</i>	Field Mint	$\begin{cases} 12, 60, 72 \\ 54 \\ 72 \\ 64, 92 \end{cases}$	$\begin{cases} \text{L. \& L. 1942} \\ \text{Wolf 1929} \\ \text{Ruttle 1931a} \\ \text{Nagao 1941} \end{cases}$	SpP	Eur., N. Asia
<i>requienii</i>		18	Ruttle 1931a	P	Cors., Sard.
<i>longifolia</i> (<i>silvestris</i>)	Horse Mint, Jap. Peppermint	$\begin{cases} 18 \\ 24 \\ 24 \\ 48 \end{cases}$	$\begin{cases} \text{Heimans 1938} \\ \text{Ruttle 1931a,} \\ \text{Junell, L. \& L. '42b} \\ \text{Suzuka \& K. 1949} \end{cases}$	Sp	North Temp.
<i>rotundifolia</i>	Apple Mint	$\begin{cases} 18 \\ 24 \\ 54 \end{cases}$	$\begin{cases} \text{Heimans 1938} \\ \text{Nagao 1941,} \\ \text{Schürhoff 1929b} \end{cases}$	PSp	Europe
<i>niliaca</i>	Egyptian M.	24, 56	Ruttle 1931a	P	Egypt
<i>spicata</i>	Spear Mint	$\begin{cases} 36 \\ 36, 48 \end{cases}$	$\begin{cases} \text{Schürhoff 1929b} \\ \text{L. \& L. 1942} \end{cases}$	P	North O.W.
<i>as viridis</i>	White S.M. Ital. Black S.M. Am. Black S.M.	$\begin{cases} 36 \\ 48 \\ 84 \end{cases}$	$\begin{cases} \text{Nagao 1941} \\ " \\ " \end{cases}$		
<i>aquatica</i>	Water Mint	$\begin{cases} 36 \\ \text{c. 96} \\ 36, 64 \end{cases}$	$\begin{cases} \text{Schürhoff 1929b} \\ \text{Ruttle 1931a} \\ \text{Glotov 1940} \end{cases}$	P	Eur., Asia, N. Afr.
<i>piperita</i>	Peppermint	$\begin{cases} 66, 68, 70 \\ 72, 84 \end{cases}$	$\begin{cases} \text{Ruttle 1931a} \\ \text{Nagao 1941} \end{cases}$	PSp	" " "
<i>v. officinalis</i>	White P.	72, 84	" "	P	
<i>v. vulgaris</i>	Black P.	$\begin{cases} 68, 72 \\ (128) \end{cases}$	$\begin{cases} " \\ \text{Glotov 1940} \end{cases}$	P	
<i>pulegium</i>	Pennyroyal	20, 40	Ruttle 1931a	MSp	North O.W.

LAVANDULA $x = 6, 9, x_2 = 15$					
<i>multifida</i>		24	Garcia 1942	HP	W. Medit.
<i>pedunculata</i>		30	" "	H	"
<i>stoechas</i>		30	" "	H	Medit.
<i>viridis</i>		30	" "	—	Port., Madeira
<i>spica</i>	Spike L.	36	Laws 1930	HP	Medit.
<i>vera v. nana</i>	Lavender	48	E.K.J.*	HP	"
<i>v. delphinensis</i>	"	50	Makino 1951		
<i>v. fragrans</i>	"	50	" "		
<i>officinalis</i>	"	54	Garcia 1942	HP	"
<i>lanata</i>		54	" "	—	Spain
<i>latifolia</i>		54	" "	HP	Medit.

SALVIA $x = 6-11, 13, 17, 19$					
$x = 6$					
<i>hispanica</i>		12	Scheel 1931	H	Trop. America
<i>aethiops</i>		24	Felfoldy 1947	H	Medit.
<i>carduacea</i>		24	Stewart 1939	H	California
<i>eremostachya</i>		24	" "	—	"

SALVIA (cont.)

<i>leucophylla</i>		24	Stewart 1939	—	California
<i>munzii</i>		24	" "	—	"
x = 7					
<i>dumetorum</i>		14	Sugiura 1937a	—	N. Eurasia
<i>officinalis</i>	Sage	14	Hruby 1935	Sp	Medit.
<i>superba</i>	Violet S.	14	Benoist 1937	H	cult
x = 8					
<i>glutinosa</i>		16	Hruby 1935	H	S. Eur.—Himal.
<i>grandiflora</i>		16	" "	H	Asia Minor
<i>sylvestris</i>		16	" 1941	H	E. Eur., N. Asia
<i>verticillata</i>	Lilac S.	16	" 1934a	H	Eur., Asia M., Caucasus
<i>columbariae</i>	Chia	{ 16	Stewart 1939	GH	California
		32	Carlson & S. 1936		
<i>apiana</i>		32	Stewart 1939	—	"
<i>clevelandii</i>		32	" "	—	"
<i>mellifera</i>		32	" "	—	"
<i>sonomensis</i>		32	" "	—	"
<i>splendens</i> (i)	Scarlet S.	32	Carlson & S. 1936	H	Brazil
<i>virgata</i>		32	Benoist 1937	H	S.E. Eur., S.W. Asia
<i>horminoides</i>	Wild Clary	64	Yakovleva 1933	—	S. Eur., N. Afr.
x = 9					
<i>austriaca</i>		18	Benoist 1937	—	S.E. Europe
<i>patens</i>	Gentian S.	18	Sugiura 1937a	H	Mexico
<i>verbenacea</i>	Vervain	{ 54	Benoist 1937	H	Eur., S.W. Asia
		64	Yakovleva 1933		
<i>pratensis</i>	Meadow S.	18	Benoist 1937	H	Eur., Cauc.
<i>v. tenorii</i>		20	Sugiura 1936b		
x = 10					
<i>coccinea</i>		20	" "	H	Trop. N. Amer.
<i>farinacea</i>		20	" "	H	Texas, Mexico
<i>splendens</i> (ii)		20	Furusato 1940	H	Brazil
<i>podolica</i>		20	Hruby 1941	—	Europe
x = 11					
<i>argentea</i>		22	Sugiura 1936b	H	Medit.
<i>jurisicii</i>		22	Hruby 1948	H	Serbia
<i>nemecii</i>		22	" "	—	Europe
<i>nutans</i>		22	Benoist 1937	H	S.E. Europe
<i>sclarea</i>	Clary	22	Suzuka 1950a	HM	S. Europe
<i>carnosa</i> v. <i>gilmani</i>		22	Stewart 1939	H	W: N. America
<i>v. pilosa</i>		32	" "		
x = 13 (6 + 7)					
<i>spathacea</i>		26	" "	H	California
x₁ = 17 (8 + 9)					
<i>valentina</i>		34	Benoist 1937	—	Spain
x₂ = 19 (9 + 10)					
<i>algeriensis</i>		38	" "	—	N. Africa
<i>barrelieri</i> (<i>pratensis</i>)		38	" "	—	Eur., Cauc.

AJUGA $x=7, 8$					
<i>chamaepitys</i>	Ground Pine	28	Rutland 1941	—	Eur., S.W. Asia, N. Africa
<i>genevensis</i>		32	Scheerer 1940	H	Eur., S.W. Asia
<i>pyramidalis</i>		32	Favarger 1953	—	N. Eur., Alps
<i>reptans</i>	Bugle	32	Scheerer 1940	H	Eur., W. Asia, N. Afr.
PRUNELLA (BRUNELLA) $x=7, 8?$					
<i>asiatica</i>		28	Suzuka & K. 1949	—	E. Asia
<i>grandiflora</i>		28	Bøcher 1949	H	Europe
		32	Hruby 1932		
<i>vulgaris</i>	Self Heal	28	Bøcher 1949	H	N. Temp.
		32	Hruby 1932		
<i>laciniata</i>		32	" "	—	Eur., W. Asia, N. Africa
TRICHOSTEMA $x=7, 10, 19$					
<i>brachiatum</i>		14	Lewis 1945	—	E: N. America
<i>lanceolatum</i>		14	" "	—	W: N. America
<i>oblongum</i>		14	" "	—	" "
<i>ovatum</i>		14	" "	—	California "
<i>austromontanum</i>		28	" "	—	"
<i>lanatum</i>	Blue Curls	20	" "	H	"
<i>parishii</i>		20	" "	—	"
<i>dichotomum</i>		38	" "	H	E: N. America
<i>setaceum</i>		38	" "	—	" "
GALEOPSIS * $x=8$					
<i>pubescens</i>		16	Müntzing 1932	—	Europe
<i>speciosa</i>	& 3 spp.	16	" "	—	"
<i>tetrahiti</i>	Hemp Nettle	32	" "	—	"
<i>bifida</i>		32	" "	—	N. & C. Europe
MELISSA $x=8$					
<i>officinalis</i>	Balm	32	Reese 1952a	MSp	Eurasia
OCIMUM $x=8$					
<i>basilicum</i>	Basil	48	Vaarama 1947a	HMSp	Trop. Asia, Afr.
<i>gratissimum</i>		64	Golubinski, T. 1938	HP	India
<i>sanctum</i>	Tulsi	64	" " 1937 "	HM	O.W. Tropics
<i>canum</i>		64, 128	" " 1937 "	P	Trop. Asia & Afr.
<i>canum</i> \times <i>grat.</i>		64 (128)	Lapin 1939	—	<i>expt.</i>
SCUTELLARIA * $x=8?$					
<i>albida</i>		32	Scheel 1931	—	S.E. Europe
<i>galericulata</i>	& 3 spp.	c. 32	" "	H	N. Temp.
<i>altissima</i>		34	Reese 1953	—	S. Europe
ORIGANUM $x=8?$					
<i>vulgare</i>	Pot Marjoram	30	Rutland 1941	Sp	Eur., Asia, N. Afr.
		32	Scheerer 1939		
ACINOS (CALAMINTHA) $x=9$					
<i>alpinus</i>		18	Reese 1953	—	Europe
<i>arvensis</i> (<i>C. acinos</i>)		18	Scheerer 1939	H	"

LAMIUM $x=9$						
<i>amplexicaule</i>	Henbit	18	Bernström 1944	—		Eurasia, N. Afr.
<i>album</i>	Wh. Deadnettle	18	Turesson 1938	M		Eur., Himal.
<i>maculatum</i>		18	Jørgensen 1927a	H		Eur.—Altai
<i>purpureum</i>		18	Bernström 1944	—		S. Eur.—Altai
<i>molucellifolium</i>		36	" "	—		N.W. Europe
<i>hybridum</i>		36	" "	—		W. Eur., N. Afr.
GALEOBDOLOM (LAMIUM) $x=9$						
<i>luteum</i>	Yellow Archangel	18	Turesson 1938	—		Eur.—Persia
<i>(L. galeobdolon)</i>						
MOSLA $x=9$						
<i>punctata</i>		18	Sugiura 1936b	—		Japan
LEONURUS $x=9, 10$						
<i>cardiaca</i>	Motherwort	18	Rutland 1941	H		W. Europe
<i>sibiricus</i>		20	Suzuka 1950a	H		E. Asia
MARRUBIUM $x=9?$						
<i>vulgare</i>	Wh. Horehound	{ 34	Rutland 1941	MSp		Eurasia
		36	Wulff 1939b			
GLECHOMA (NEPETA) $x=9$						
<i>hederacea</i>	Ground Ivy	{ 18	Scheerer, L. & L. '42	H		Eurasia
		24	L. & L. 1942a			
		36	Felföldy 1947,			
		36	Rutland 1941			
NEPETA $x=9, 17$						
<i>macrantha</i>		18	S. & S. 1938	H		Siberia
<i>mussini</i>		18	Floto & G. 1947	H		Cauc., Persia
<i>nuda</i>		18	Sugiura 1940	—		S. Europe
<i>stachyoides</i>		18	" 1944	—		Algeria
<i>cataria</i>	Catmint	36	" 1940	HM		Eur.—Himal.
<i>grandiflora</i>		36	" "	—		Caucasus
<i>kokanica</i>		36	" "	—		Turkestan
<i>nepetella</i>		34	Floto & G. 1947	H		S. Europe
<i>pseudomussinii</i>		26	" "	H		<i>cult</i> (clone)
<i>(muss. × nepetella)</i> (17 + 9)						
CLINOPODIUM (CALAMINTHA) $x=10$						
<i>vulgare</i>	Wild Basil	20	Scheerer 1939	—		N. Temp.
BALLOTA $x=11$						
<i>nigra</i>	Black Horehound	22	Rutland 1941	H		Eur., S.W. Asia
LYCOPUS $x=11$						
<i>americanus</i>		22	Ruttle 1932	—		N. America
<i>europaeus</i>	Gipsywort	22	" "	—		S. Eur., N. Asia
PYCNOSTACHYS $x=17$						
<i>eminii</i>		34	Snoad 1952	—		Trop. Africa

PERILLA $x = ?$				
<i>octmoides</i>	38, 40	Yamane 1950	—	E. Asia
PROSTANTHERA $x = ?$				
<i>violacea (thymifolia)</i>	c. 156	Snoad 1952	H	Australia
SIDERITIS $x = ?$				
<i>spinulosa</i>	22, 28, 30	Coutinho & L.-A. '48	—	Iber. Penin.
<i>hyssopifolia</i>	c. 32	Reese 1953	—	S. Eur. mtns.

MONOCOTYLEDONS

Group I

BUTOMALES

265, 266

H

ALISMATALES

267–269

H

TRIURIDALES

270

H

JUNCAGINALES

271–273

H

APONOGETONALES

274, 275

H

POTAMOGETONALES

276–277

H

NAJADALES

278, 279

H

COMMELINALES

280–282

H

XYRIDALES

283, 284

H

ERIOCAULALES

285

H



Hydrocharis morsus-ranae

265 BUTOMACEAE

TENAGOCHARIS $x = 7$				
<i>latifolia</i>	14	Y. S. Rao 1953b	—	O.W. Tropics
HYDROCLEIS $x = 8$				
<i>nymphoides</i> Water Poppy	16	Y. S. Rao 1953b	H	Brazil
LIMNOCHARIS $x = 10$				
<i>flava</i>	20	Y. S. Rao 1953b	H	Trop. America
BUTOMUS $x = 13$				
<i>umbellatus</i> Flowering Rush	26	Y. S. Rao 1953b	H	Temp. Eurasia
	26, 39 (3x)	L. & L. 1948		

266 HYDROCHARITACEAE

ENHALUS $x = 7$				
<i>acoroides</i> Sea Fruit	14	E.K.J.*	T(V)	N. Malaya, Austr.
HYDROCHARIS $x = 7$				
<i>morsus-ranae</i> Frog's Bit	28	Maude 1940	H	Eur., Temp. Asia
LAGAROSIPHON $x = 7, 11$				
<i>vaginalis</i>	14	E.K.J.*	Ma	E. Africa, India
<i>crispus</i>	22	Eichhorn 1943	—	E. Trop. Africa
BLYXA $x = 8$				
sp.	16	Y. S. Rao 1950b	—	O.W. Tr. & Sub-Trop.
HYDRILLA $x = 8$				
<i>verticillata</i>	16, 24	Sinoto 1929	FoMa	W. Indies
ELODEA (HELODEA, ANACHARIS) $x = 8$				
<i>callitrichoides</i>	16	Heitz 1927	H	S. America
<i>canadensis</i> Ditch Moss	24	Heppell 1945 *	H	N. America
	48	Santos 1924	H	
<i>densa</i>	48	M. & S. 1935	H	Argentina
HALOPHILA $x = 9$				
<i>ovata</i>	18	Harada 1951	—	Tr. Asia, Austr.
VALLISNERIA $x = 10$				
<i>spiralis</i>	20	Jorgensen 1927b	H	Cosmop.
<i>gigantea</i>	40	„ „	H	E. Indies
OTTELIA $x = 11$				
<i>altismoides</i>	{ 22, 66	Y. S. Rao 1950b	M(V)	Trop. Asia & Austr.
	44	Islam 1950		
BOOTIA $x = 11$				
sp.	66	Y. S. Rao 1950b	—	O.W. Tropics
STRATIOTES $x = 12$				
<i>aloides</i> Water Soldier	24	Schürhoff 1926	H	Europe

267 ALISMATACEAE

ALISMA $x = 5, 6, 7, 13$

	{ 10, 14, 16, 28	Wulff 1950		
	12	Palmgren 1943		
<i>plantago-aquatica</i>	14	Heppel, M. 1939		
Water Plantain	14	Woess 1948	H	N. Temp.
	14	Castro & W. 1950		
	14	Erlandsson 1946		
<i>gramineum</i>	14	Woess 1948	—	"
	14	Erlandsson 1946		
<i>triviale</i>	14	Brown 1946	—	"
	26	Castro & W. 1950		
	26	Woess 1948		
<i>lanceolatum</i>	{ 26, 28	L. & L. 1944b	—	"
	28	Erlandsson 1946		
<i>subcordatum</i>	28	Brown 1946	—	N. America

BALDELLIA (ALISMA, ECHINODORUS) $x = 7, 8, 9$

	{ 14	Palmgren 1943		
<i>ranunculoides</i>	16	L. & L. 1944b	—	N. Europe
	18	Hagerup 1944		
	22	Clavier unpub.		

ECHINODORUS $x = 11$

<i>cordifolius</i>	22	Baldwin & S. '55b	—	N. America
--------------------	----	-------------------	---	------------

SAGITTARIA * $x = 11$ (10)

<i>montevidensis</i>	Giant Alisma	20	Taylor 1925b	H	S. America
<i>sagittifolia</i>	Arrowhead	{ 20	Nawa 1928	H	N. Temp.
		22	L. & L. 1942		
<i>aginashi</i>		22	Shinke 1929	—	Japan
<i>natans</i>	& 12 spp.	22	Brown 1946	—	N. America
<i>latifolia</i>		22	Oleson 1941	—	"
<i>trifolia</i>		22	Morinaga & F. 1931	—	China, Japan

LIMNOPHYTON $x = 12$

<i>obtusifolium</i>	24	Murthy 1933	—	Tr. Asia & Afr.
---------------------	----	-------------	---	-----------------

268 SCHEUCHZERIAEAE

SCHEUCHZERIA $x = 11$

<i>palustris</i>	22	Manton 1949	—	N. Temp.
------------------	----	-------------	---	----------

270 TRIURIDACEAE

SCIAPHYLLA $x = 12?$

<i>japonica</i>	48	Ohga & S. 1932	—	Japan
-----------------	----	----------------	---	-------

271 JUNCAGINACEAE

TRIGLOCHIN $x = 6, 8$

<i>maritimum</i>	Arrowgrass	{ 12	L. & L. 1944b	—	N. Temp.
		48	La Cour 1952		
<i>palustre</i>		24	L. & L. 1944b	—	"

TRIGLOCHIN *cont.*)

<i>barrelleri</i>	30	Castro & F. 1946	—	Medit., Trop. & S. Africa
<i>bulbosum</i>	32	La Cour 1952	—	„ „

275 ZOSTERACEAE

ZOSTERA * $x = 6$

<i>hornemanniana</i>	12	Wulff 1937a	—	W. Europe
<i>marina</i> Eelgrass & 4 spp.	12	Harada 1948	Ma(Su)	W. Eur., N. Am.

276 POTAMOGETONACEAE

PHYLLOSPADIX $x = 10$

<i>iwatensis</i>	20	Harada 1944	—	Japan
<i>japonica</i>	16 ♂, 20 ♀	„ „	—	„

POTAMOGETON * $x = 13, 14$

$x = 13$

<i>acutifolius</i>	26	L. & L. 1942	—	Eur., Caus., Austr.
<i>coloratus</i> & 9 spp.	26	Palmgren 1939	—	Europe
<i>oxyphyllus</i>	26	Harada 1942	—	Japan
<i>panormitanus</i>	26	„ „	—	N. & S. Temp.

<i>anguillanus</i> & 9 spp.	52	„ „	—	Japan
<i>fluitans</i>	52	Kuleszanka, T. 1935	—	Temp. & Trop.
<i>gramineus</i> & 2 spp.	52	Palmgren 1939	—	Europe
<i>perfoliatus</i>	52	Felfoldy 1947	—	N. & S. Temp.

<i>filiformis</i>	c. 78	L. & L. 1942	—	N. America
<i>pectinatus</i>	78	Harada 1942	—	N. & S. Temp.

$x = 14$

<i>cristatus</i>	28	„ „	—	America
<i>monogynus</i>	28	„ „	—	Europe
<i>vaseyi</i>	28	„ „	—	N. America
<i>fauriei</i>	29!	„ „	—	Japan
<i>densus</i>	30	Palmgren 1939	—	N. Temp.

<i>apertus</i>	42	Harada 1942	—	Japan
<i>kamogawaensis</i>	42	„ „	—	„
<i>vaginatus</i>	c. 88	Palmgren 1939	—	N. & S. Temp.

277 RUPPIACEAE

RUPPIA $x = 8$

<i>maritima</i>	16	Wulff 1937a	—	Temp., Sub-Trop.
-----------------	----	-------------	---	------------------

278 ZANNICHELLIACEAE

ZANNICHELLIA $x = 7$

<i>palustris</i>	28	Scheerer 1940	—	Cosmop.
------------------	----	---------------	---	---------

279 NAIADACEAE

NAIAS $x = 6$

<i>marina</i> (major)	{ 12 ♀, 13 ♂	Lewitzky 1931a	Fo	Temp. & Trop.
<i>tenuicaulis</i>	12 ♀, 13 ♂	Harada 1943	—	Japan
<i>ancistrocarpa</i>	12, 24	" "	—	"
<i>flexilis</i>	12, 24	Chase 1947	—	Eur., Egypt
<i>minor</i>	{ 12	Harada 1943	—	Temp. & Tr. O.W.
	{ 24	Chase 1947	—	
<i>foveolata</i>	12, 24, 34	Harada 1943	—	Java
<i>gracillima</i>	{ 12	" "	—	Temp. & Tr. O.W.
	{ 24, 36	Chase 1947	—	
<i>guadalupensis</i>	{ 12, 36, 42	" "	—	W. Indies
	{ 48, 54, 60	" "	—	
<i>graminea</i>	24	Harada 1943	—	Temp. & Tr. O.W.
<i>muenscheri</i>	24	Chase 1947	—	U.S.A.
<i>oguraensis</i>	24	Harada 1943	—	Japan
species	46	" "	—	

280 COMMELINACEAE

POLLIA $x = 5, 19$

<i>subumbellata</i>	10	Darlington 1937b	—	Himalayas
<i>japonica</i>	38	Mitsukuri 1947	—	Japan

RHOE O $x = 6$

<i>discolor</i>	12 (24)	Walters & G. 1948	H	C. America
-----------------	---------	-------------------	---	------------

SETCREASEA (TRELESEA) $x = 6$

<i>brevifolia</i>	{ 12, 24	Richardson 1935b	—	Texas
	{ 36	Anderson & S. 1936	—	
<i>pallida</i>	12, 36	Celariet 1955	—	Mexico
<i>tumida</i>	24	" "	—	"

ZEBRINA $x = 6$

<i>pendula</i>	24, 48	Darlington 1929a	H	Mexico
----------------	--------	------------------	---	--------

SPIRONEMA $x = 6$

<i>fragrans</i>	12	Darlington 1929a	H	Mexico
-----------------	----	------------------	---	--------

CALLISIA $x = 6$

<i>repens</i>	12	Anderson & S. 1936	—	S. America
---------------	----	--------------------	---	------------

CUTHBERTIA $x = 6$

<i>graminea</i>	12, 24, 25, 36, 37	Giles 1942	—	S.E: U.S.A.
-----------------	--------------------	------------	---	-------------

WELDENIA $x = 6$

<i>candida</i>	{ 18	La Cour 1952	H	Mexico
	{ 24	Atchison et al. 1949	—	

TRADESCANTIA $x = 6, 8, 12, 13, 15, 18$

$x = 6$ (virginiana group)				
<i>bracteata</i>	12, 18	Anderson & S. 1936	—	E. & S. U.S.A.
<i>canaliculata</i>	12, 24	" "	—	" "

TRADESCANTIA (cont.)

<i>edwardsiana</i>	12	Anderson & S. 1936	—	E. & S. U.S.A.
<i>ernestiana</i>	12	" "	—	" "
<i>hirsuticaulis</i>	12	" "	—	" "
<i>hirsutiflora</i>	24	" "	—	" "
<i>humilis</i>	12	" "	—	" "
<i>gigantea</i>	12	" "	—	" "
<i>longipes</i>	24	" "	—	" "
<i>occidentalis</i>	12, 24	" "	—	" "
<i>ozarkana</i>	24	" "	—	" "
<i>paludosa</i>	12 + 0-12B	" "	—	" "
<i>reverchoni</i>	24	Brown <i>et al.</i> 1951	—	" "
<i>roseolens</i>	24	Anderson & S. 1936	—	" "
<i>subaspera</i>	24	" "	—	" "
<i>tharpai</i>	24	" "	—	" "
<i>virginiana</i>	Spiderwort 24 + 0-6B	Darlington 1929a	H	<i>cult</i>

$x = 6, 7, 8, 12$, etc.

<i>iridescens</i>	12	Atchison <i>et al.</i> 1949	—	Mexico
<i>crassifolia</i>	12 + 0-2B	Darlington 1929a	H	S. America
<i>commelinoides</i>	14	Celair 1955	—	Mexico
<i>rosea</i>	24	Anderson & S. 1936	—	U.S.A.
<i>reflexa</i>	24, 26	Mitsukuri 1947	—	"
<i>micrantha</i>	26	Anderson & S. 1936	—	Mexico
<i>geniculata</i>	{ 32	" "	—	S. America
	48	Simmonds 1954	—	
<i>navicularis</i>	32	Anderson & S. 1936	—	Peru
<i>fluminensis</i>	Wandering Jew 60	Anderson & S. 1936	H	"
<i>as albiflora</i>	72	" "	—	Brazil

CAMPELIA $x = 8$

<i>zanonia</i>	16	Darlington 1937b	—	Mex.—Brazil
----------------	----	------------------	---	-------------

TRIOGANDRA (DESCANTARIA, NEODONNELLIA) $x = 8$

<i>amplexicaulis</i>	16	Celair 1955	H	Cent. America
<i>disgrega</i>	16	Darlington 1937b	H	" "
<i>pflanzii</i>	16	Celair 1955	—	Bolivia
<i>grandiflora</i>	32	Wu 1941	H	Guatemala
<i>cumanensis</i>	48	Celair 1955	—	Cent. America
<i>elongata</i>	{ c. 50	Simmonds 1954	—	C. & S. Amer.
	60	Saura 1948b	—	

ANEILEMA $x = 10$

<i>nudiflorum</i>	Bird's Foot Gr. 20	Simmonds 1954	FoV	S.E.: Asia
<i>keisak</i>	30	Mitsukuri 1947	—	Japan
<i>spiratum</i>	40	Murthy 1934	FoV	India

CYANOTIS $x = 10, 12, 14$

<i>axillaris</i>	20	Islam & B. 1952	—	India
<i>cristata</i>	24 + 0-1B	" "	H	India, Malaya
<i>somaliensis</i>	28	Anderson & S. 1936	H	E. Africa

COMMELINA $x = 11, 12?, 15?$

<i>bengalensis</i>	22, 68	Ganguly 1946, D. '29a (Fo)V	—	O.W. Tropics
<i>diffusa</i>	30	Simmonds 1954	H	Tropics
<i>communis</i>	48, 90	Mitsukuri 1947	—	China
<i>elegans</i>	c. 52	Simmonds 1954	H	S: U.S.A.
<i>nudiflora</i>	56	Anderson & S. 1936	FoV	Tropics

COMMELINA (cont.)

<i>hirtella</i>	c. 58	Bowden 1940a	—	E: U.S.A.
<i>coelestis</i>	90	Anderson & S. 1936	—	Mexico
<i>salicifolia</i>	75	Sharma 1955	—	India
<i>obliqua</i>	150	„ „	—	„

COMMELINANTIA $x = 13$

<i>anomala</i>	26	Anderson & S. 1936	H	Mexico
----------------	----	--------------------	---	--------

COLEOTRYPE $x = 18$

<i>natalensis</i>	36	Anderson & S. 1936	H	S. Africa
-------------------	----	--------------------	---	-----------

COCHLIOSTEMA $x = 19$

<i>odoratissimum</i>	38	Geitler 1939	H	Ecuador
----------------------	----	--------------	---	---------

DICHORISANDRA $x = 19$

<i>thyrsiflora</i>	38	Anderson & S. 1936	H	Brazil
--------------------	----	--------------------	---	--------

TINANTIA $x = ?$

<i>fugax</i>	{ 64	Anderson & S. 1936	—	Trop. America
	68	Darlington 1929a		

PALISOTA $x = ?$

<i>bracteosa</i>	80	Anderson & S. 1936	H	Trop. Africa
------------------	----	--------------------	---	--------------

285 ERIOCAULACEAE

ERIOCAULON $x = 8, 9$

<i>cinereum</i>	32	Erlandsson 1942a	—	Australia
<i>truncatum</i>	32	„ „	—	India
<i>sexangulare</i>	36	„ „	—	India, Madag.

Group II

BROMELIALES

286

H

ZINGIBERALES

287-292

H



Musa : "Gros Michel"

286 BROMELIACEAE

TILLANDSIA $x = 8$					
<i>usneoides</i>	Old Man's Beard	32	Billings 1904	HT	Trop. America
<i>lindeniana</i>		64	Lindschau 1933	T	Brazil
<i>streptophylla</i>		64	" "	HT	Mexico
<i>juncea</i>		c. 96	" "	T	Trop. America
BROMELIA $x = 8$					
<i>fastuosa</i>		c. 96	Lindschau 1933	HT	Trop. America
<i>pinguin</i>	Wild Pineapple	96	Collins & K. 1931	HT	" "
CRYPTANTHUS $x = 9, 17$					
<i>acaulis</i>		{ 34	M. & S. 1935	H	Brazil
		{ 36	Lindschau 1933		
<i>zonatus</i>		36	" "	H	"
<i>bivittatus</i>		36, 54	" "	H	S. America
<i>beuckeri</i>		54	" "	H	Brazil
AREGELIA * $x = (9), 27$					
<i>marmorata</i>	& 4 spp.	54	Lindschau 1933	H	Brazil
<i>microps</i>		c. 126	" "	H	cult
BILLBERGIA * $x = (9), 27$					
<i>liboniana</i>		54	M. & S. 1935	H	Brazil
<i>ligulata</i>	& 6 spp.	54	Lindschau 1933	H	S. America
<i>vittata</i>		72	" "	H	Brazil
sp.		108	M. & S. 1935		—
NIDULARIUM * $x = (9), 27$					
<i>princeps</i>	& 3 spp.	54	Lindschau 1933	H	Brazil
AECHMEA * $x = 25, 27$					
<i>comata</i>	& 4 spp.	50	Lindschau 1933	H	Trop. America
<i>hystrix</i>		54	" "	H	Brazil
CARAGUATA $x = 28$					
<i>zahnii</i>	Caraguata	56	Lindschau 1933	T	Trop. America
ACANTHOSTACHYS $x = 25$					
<i>strobilacea</i>		50	Lindschau 1933	—	Brazil
CANISTRUM $x = 25$					
<i>roseum</i>		50	Lindschau 1933	H	Brazil
MACROCHORDIUM $x = 25$					
<i>tinctorium</i>		50	Lindschau 1933	—	Brazil
DYCKIA $x = 25$					
<i>altissima</i>		50	Lindschau 1933	H	Brazil
<i>sulphurea</i>		50	" "	H	"
PUYA $x = 25$					
<i>spathacea</i>		50	Lindschau 1933	H	Argentina
HECHTIA $x = 25$					
<i>ghiesbreghtii</i>		50	Lindschau 1933	H	Mexico

PITCAIRNIA * $x = 25$					
<i>andrea</i>	& 4 spp.	50	Lindschau 1933	H	Ecuador—Venez.
<i>muscosa</i>		50	M. & S. 1935	H	Brazil
<i>punicea</i>		50	Lindschau 1933	H	Mexico
ANANAS $x = 25$					
<i>microstachys</i>		50	Collins 1933	FTVit	Brazil
<i>comosus</i>	Pineapple	50, 75, 100	Collins & K. 1935	FTVit	cult, Brazil
PSEUDANANAS (ANANAS) $x = 25$					
<i>macrodonates</i>		c. 100	Lindschau 1933	—	Brazil
LINDMANNIA $x = 25?$					
<i>penduliflora</i>		c. 120	Lindschau 1933	—	Peru

287 MUSACEAE

ENSETE $x = 9$					
<i>edule</i>				HT	Trop. Africa
as <i>buchanani</i>		18	Cheeseman 1947		Nyasaland
as <i>davyae</i>		18	" "		Transvaal
as <i>Musa ensete</i>		18	Cheeseman & L. 1935		Abyssinia
as <i>livingstoniana</i>		18	Cheeseman 1947		Nyasaland
<i>gillettii</i>		18	" "	—	Trop. Africa
<i>pechelli</i>		18	E.K.J.	—	New Guinea
<i>superba</i>		18	Agharkar & B. 1935	—	E. Indies
MUSA $x = 10, 11$					
S. 1. AUSTRALIMUSA $x = 10$					
<i>textilis</i>	Manila Hemp	20	Cheeseman & L. 1935	T	Philippines
<i>fehi</i>	Fei, Borabora	20	Dodds 1946	F	Oceania
<i>lolodensis</i>		20	Simmonds & D. 1949	—	New Guinea
<i>peekelii</i>		20	" "	—	"
<i>erecta</i>		20	Simmonds 1953	—	Solomon Is.
<i>angustigemma</i>		20	" "	—	New Guinea
S. 2. CALLIMUSA $x = 10$					
<i>borneensis</i>		20	Simmonds & D. 1949	—	Sarawak
<i>coccinea</i>		20	Cheeseman & L. 1935	TH	China
<i>violascens</i>		20	Simmonds & D. 1949	—	Malaya
S. 3. EUMUSA $x = 11$ (Bananas or Plantains)					
<i>acuminata</i> (incl. <i>banksii</i> , <i>malaccensis</i> , etc.)		22	Simmonds & D. 1949	—	S.E. Asia
edible & exp. forms 22, 33, 44 etc. (<i>paradisica</i> , <i>cavendishii</i> , etc.)			Dodds & S. 1948	F	cult
<i>balbisiana</i>		22	Simmonds & D. 1949	—	S.E. Asia
edible & exp. forms 22, 33, 44 etc.			Dodds & S. 1948	F	cult
<i>acuminata</i> × <i>balbisiana</i> edible & exp. forms 22, 33, 44, etc.			" "	F	cult
<i>sapientum</i> , etc.					
<i>basjoo</i>	Bashofu	22	Simmonds & D. 1949	HT	Liukiu
<i>itinerans</i>		22	" "	—	Burma
<i>nagensium</i>		22	Wilson 1946	—	India

MUSA (cont.)

S. 4. RHODOCHLAMYS x = 11

<i>laterita</i>	22	Simmonds & D. 1949	—	Burma
<i>ornata</i>	22	Cheeseman & L. 1935	H	N.E. India
<i>sanguinea</i>	22	Simmonds & D. 1949	H	Assam
<i>velutina</i>	22	"	"	"

288 STRELITZIACEAE

STRELITZIA x = 7, 11

<i>nicolai</i>	14	Sato 1948	H	S. Africa
<i>reginae</i>	Bird of Paradise Fl.	14	Cheeseman & L. 1935	H
<i>augusta</i>	22	Simmonds 1954	H	"

HELICONIA x = 8, 11, 12 (13)

<i>metallica</i>	16, 18, 20, 22	Agharkar & B. 1935	H	Ecuador—Colom.
<i>seemannii</i>	22	Cheeseman & L. 1935	H	India
<i>bihal</i>	False Plantain	24	"	W.I., Tr. S. Am.
<i>as aureo-striata</i>	24	Venkatasubban 1946		<i>cult</i>
<i>brevispatha</i>	24	Cheeseman & L. 1935	—	Mexico
<i>brasiliensis</i>	{ 24	Venkatasubban 1946,	H	Brazil, Guiana
	24	Chakravorti 1949		
<i>illustris</i>	24	Venkatasubban 1946	H	Pacific Is.
<i>insignis</i>	24	Cheeseman & L. 1935	H	S. America
<i>psittacorum</i>	Parrot P.	24	"	" ?
<i>rubra</i>	26	Venkatasubban 1946	—	

RAVENALA x = 11

<i>madagascariensis</i>	Travellers' T.	22	Cheeseman & L. 1935	H	Madagascar
-------------------------	----------------	----	---------------------	---	------------

290 ZINGIBERACEAE

COSTUS x = 9

<i>cylindricus</i>	18	Simmonds 1954	T	Trinidad	
<i>bicolor</i>	18	Venkatasubban 1946	—	Cameroons	
<i>discolor</i>	18	Raghavan & V. 1943	H	Brazil	
<i>friedrichsenii</i>	18	Simmonds 1954	H	Cent. America	
<i>igneus</i>	18	Raghavan & V. 1943	H	Brazil	
<i>malortieanus</i>	18	Gregory 1936	HT	Cent. America	
<i>as elegans</i>	18	Venkatasubban 1946			
<i>niveopurpureus</i>	18	Simmonds 1954	—	Martinique	
<i>speciosus</i>	{ 18	Sato 1948	H	India, Malaya	
	36	Raghavan & V. 1943			
<i>as sericeus</i> (3x)	27	Simmonds 1954			
<i>afer</i>	Ginger Lily	36	Venkatasubban 1946	HSp	Trop. Africa
<i>pictus</i>		36	" "	H	Mexico
<i>musaicus</i>	c. 102	" "	H		Congo, <i>cult</i>

ZINGIBER x = 11, 12

<i>cassumunar</i>		22	Raghavan & V. 1943	M	Trop. Asia
<i>zerumbet</i>	Wild Ginger	22	"	V	"
<i>mioga</i>	Jap. Wild G.	55	Morinaga <i>et al.</i> 1929	Sp	Japan
<i>officinale</i>	Ginger	22	Raghavan & V. 1943	Sp	Malaya, <i>cult</i>
		{ 22 + 2B	E.K.J.*		

KAEMPFERIA $x = 9, 11, 12$					
<i>atrovirens</i>		22	Venkatasubban 1946	H	Borneo
<i>speciosa</i>		22	" "	—	India
<i>gibsoni</i>		24	Raghavan & V. 1943	H	—
<i>gilbertii</i>		36	" "	H	India, Burma
<i>galanga</i>		54	" "	MSp	India
<i>rotunda</i>		54	" "	H	India, Java
ALPINIA $x = 12$					
<i>allughas</i>	Tara	48	Raghavan & V. 1943	M	India
<i>calcarata</i>		48	" "	M	India, China
<i>chinensis</i>		48	Sato 1948	—	China
<i>galanga</i>	Siamese G.	48	Raghavan & V. 1943	Sp	Trop. Asia
<i>japonica</i>		48	Sato 1948	—	Japan
<i>nutans</i>		48	Raghavan & V. 1943	H	India
<i>rafflesiana</i> (vittata)		48	" "	H	Malaya
<i>sanderae</i>		48	Venkatasubban 1946	H	cult
AMOMUM (PHAEOMERIA) $x = 12$					
<i>magnificum</i>		48	Venkatasubban 1946	H	E. Indies
		52	Chakravorti 1952		
ELETTERIA $x = 12$					
<i>cardamomum</i>	Malabar Card.	48	Gregory 1936	MSp	S. Ind., Burma
		52	Chakravorti 1952		
GLOBBA $x = 12$					
<i>bulbifera</i>		48	Raghavan & V. 1943	—	Malaya
PHAEOMERIA (NICOLAJA) $x = 12$					
<i>atropurpurea</i>		48	Boehm 1931	H	Malaya
CURCUMA $x = 16, 21$					
<i>longa</i>	Turmeric	{	32 Sato 1948	DSp	Malaya, cult
			62 Raghavan & V. 1943		
(domestica)			64 Sugiura 1931		
<i>amada</i>	Mango G.	42	Raghavan & V. 1943	SpV	India
<i>aromatica</i>	Yellow Zedoary	42	" "	MSp	"
<i>petiolata</i>		64	Venkatasubban 1946	DHSp	E. Asia
<i>zedoaria</i>	Zedoary	64	" "	DHSp	India
BRACHYCHILUS $x = 16$					
<i>horsfieldii</i>		32	Holzer 1952	H	Java
HEDYCHIUM $x = 9?, 17, 26$					
<i>flavescens</i>		34	Raghavan & V. 1943	H	India, Masc. Is.
<i>spicatum</i>		34	Sato 1948	H	India
<i>greenii</i>		36	Raghavan & V. 1943	H	"
<i>coccineum</i> v. <i>angustifolium</i>		52	Venkatasubban 1946	H	India, Burma
<i>flavum</i>		52	Raghavan & V. 1943	H	Himalayas
<i>coronarium</i>	Ginger Lily	54	" "	H	India, China
<i>gardnerianum</i>		54	" "	H	Himalayas
<i>elwesii</i>		66	Gregory 1936	HP	Assam
<i>gracile</i>		66	Raghavan & V. 1943	HSp	India

291 CANNACEAE

CANNA $x = 9$

<i>discolor</i>		18	Offerijns 1935	H	Trop. W. Indies
<i>glauca</i>	Arrowroot C.	18	Honing 1928	HR	W. Ind., Mexico
<i>flaccida</i>		18	Belling, T. 1931	H	N. America
<i>humilis</i>		18	Offerijns 1935	H	China
<i>edulis</i>	Queensland A.	{ 18	Simmonds 1954		
		27	Venkatasubban 1946	HR	Trop. America
<i>indica</i>	Indian Shot	{ 18	Honing 1928	HR	Trop. America
		27	Belling 1925		
<i>limbata (aureo-vittata)</i>		18, 36	Honing 1928	H	Brazil

292 MARANTACEAE

THALIA $x = 6$

<i>dealbata</i>	12	Suessenguth 1921	HT	S.E: U.S.A.
-----------------	----	------------------	----	-------------

CALATHEA $x = 4, 11, 12, 13$

<i>veitchiana</i>	{ 8	Sato 1948	H	Peru
	26	Venkatasubban 1946		
<i>mediopicta</i>	22	" "	H	Brazil
<i>insignis</i>	22	Sato 1948	H	"
<i>grandiflora</i>	24	Venkatasubban 1946	H	"
<i>lietzei</i>	24, 26	" "	H	"
<i>zebrina</i>	24, 26	" "	H	"
<i>lindeniana</i>	26	" "	H	"
<i>makoyana</i>	26	" "	H	"
<i>roseo-picta</i>	26	" "	H	"
<i>taeniosa</i>	52	Sato 1948	H	"
as <i>Maranta asymmetrica</i>	24	Venkatasubban 1946		

MARANTA $x = 6, 13$

<i>nitida-picta?</i>	8	Venkatasubban 1946	—	—
<i>arundinacea</i> v. <i>variegatum</i>	{ 18	Sato 1948	HR	Trop. Amer., W.
W.I. Arrowroot	48	Simmonds 1954		Indies
as <i>Phrynium</i>	46	Venkatasubban 1946		
<i>bicolor</i>	24	" "	H	Brazil, Guiana
<i>tigrina</i>	24	" "		—
<i>nitida</i>	26	" "		—
<i>leuconeura</i> v. <i>massangeana</i>	26	" "	H	Brazil
<i>striata</i>	26	Sato 1948	—	?

CTENANTHE $x = 9$

<i>oppenheimiana</i>	18	Sato 1948	H	Brazil
----------------------	----	-----------	---	--------

MONOTAGMA $x = 9$

<i>smaragdinum</i>	27	Sato 1948	H	Ecuador
--------------------	----	-----------	---	---------

STROMANTHE $x = ?$

<i>sanguinea</i>	{ 24	Suessenguth 1920	HR	Brazil
	44	Venkatasubban 1946		

Group III

LILIALES

293-298

H

ALSTROEMERIALES

299-301

H

ARALES

302, 303

H

TYPHALES

304, 305

H

AMARYLLIDALES

306

H

IRIDALES

307

H



Puschkinia libanotica

293 LILIACEAE

Order of the Tribes with their Basic Numbers

<p>I Scilleae: 3-15</p> <p>II Allieae: 5-9</p> <p>III Tulipeae: 6-12</p> <p>IV Kniphofieae: 6</p> <p>V Agapantheae: 6, 15</p> <p>VI Aloineae: 7</p> <p>VII Asphodeleae: 7-13</p> <p>VIII Uvularieae: 7, 8, 11</p> <p>IX Polygonateae: 6-11</p> <p>X Colchiceae: 7-27</p> <p>XI Johnsonieae: 8</p> <p>XII Milliganieae: 8</p> <p>XIII Dianelleae: 8, 9</p>	<p>XIV Veratreae: 8, 10, 11</p> <p>XV Asparageae: 10</p> <p>XVI Bowieae: 10</p> <p>XVII Anguillarieae: 10, 11</p> <p>XVIII Tricyrtideae: 13</p> <p>XIX Narthecieae: 12, 13, 14, 15, 17</p> <p>XX Heloniadeae: 12, 17</p> <p>XXI Ophiopogoneae: 18</p> <p>XXII Peliosantheae: 18</p> <p>XXIII Aspidistreae: 18, 19</p> <p>XXIV Convallarieae: 19</p> <p>XXV Herrerieae: 27</p>
---	---

TRIBE I: SCILLEAE

ORNITHOGALUM $x = 3, 5, 6, 7, 8, 9$, etc.

<i>virens</i>	6	Quintanilha & C. '47	H	Mozambique
<i>graminifolium</i>	10	Therman 1951	H	S. Africa
<i>libanoticum</i>	10	Geitler 1929b	—	Syria
<i>cydni</i>	12	Delaunay 1923	—	Asia Minor
<i>fimbriatum</i>	12	" 1926	H	"
<i>leptophyllum</i>	12	Pienaar unp.	—	Transvaal
<i>pretoriense</i>	12	"	—	"
<i>nanum</i>	12	Delaunay 1926	—	Greece, Asia M.
<i>thyrsoides</i> Chinchierinchees	12	Neves 1952	H	Cape
<i>zeyheri</i>	12	" 1953	—	S. Africa
<i>tenuifolium</i>	16	Delaunay 1926	H	S. Eur., Asia M.
<i>as gussonel</i>	18	Polya 1949		
<i>pyrenaicum</i> French	16 + 0-3B	Neves 1952	HV	S. Eur., S.W. Asia
Asparagus				
<i>v. flavescens</i>	16 + 0-1B, 24	" "		
<i>exscapum</i>	18	Martinoli 1950	H	Dalmatia
<i>tempskyannum</i>	18	Delaunay 1926	—	Asia Minor
<i>umbellatum</i> Star of	18 + 0-6B,	Neves 1952	H	Eur., Asia M., N. Africa
Bethlehem	27 + 0-1B, 36,			
	43, 45, 52, 54, 72			
<i>pyramidale</i>	24	" "	H	Medit
<i>boucheanum</i>	28	Lauber 1947	—	S.W. Asia
<i>nutans</i>	30	Nakajima 1936	H	S. Europe,
	42	Holzer 1952		Asia Minor
<i>arcuatum</i>	32	Neves 1952	—	Caucasus
<i>lactuum</i>	32	Nakajima 1936	H	S. Africa
<i>unifolium</i>	34 + 0-1B	Neves 1952	H	W. Medit.
<i>concinnum</i>	36 + 0-6B	" "	—	"
<i>arabicum</i> (3x)	51	" "	H	Medit.
<i>caudatum</i>	54	Therman 1951	H	S. Africa
<i>divergens</i>	54	Neves 1952	H	S. Europe
<i>narbonense</i>	54 + 0-11B	" "	H	Medit., S.W. Asia

BELLEVALIA (HYACINTHUS) $x = 4$

(i) <i>desertorum</i>	8	Feinbrun 1939	—	Palestine
<i>flexuosa</i>	8	" "	—	"

BELLEVALIA (cont.)

<i>romana</i>	8	Feinbrun 1939	H	Italy, Greece
<i>sessiflora</i>	8	" "	—	Libya, Egypt
(ii) <i>ciliata</i>	8	" "	—	Algiers—Greece
<i>longipes</i>	8	" "	—	Assyria
<i>speciosa</i>	8	" "	—	Transcaucasia
<i>wilhelmsii</i>	8	" "	—	Caucasus
<i>palmyrensis</i>	16	" "	—	Syria
<i>stepporum</i>	16	" "	—	"
(iii) <i>dubia</i>	8	Chiarugi 1949	—	W. Medit.
<i>fomini</i>	8	Feinbrun 1939	—	E. Caucasus
<i>hackeli</i>	8	Levan 1944	—	Europe
<i>macrobotrys</i>	8	Feinbrun 1939	—	E. Caucasus
<i>trifoliata</i>	8	" "	—	N.E. Medit.
<i>webbiana</i>	{ 8	" "	—	Tuscany
	16	Chiarugi 1949	—	
<i>warburgii</i>	16	Feinbrun 1939	—	Palestine
<i>alexandrina</i>	24	" "	—	Alexandria
(iv) <i>formiculata</i>	8	Delaunay 1926	—	—
<i>acutifolia</i>	8	" "	—	—

DIPCADI $x = 4, 9$

<i>serotinum</i>	{ 8 + 0-1B	Levan 1944	H	S. Eur., N. Africa
	8 + 2-16B	Fernandes <i>et al.</i> 1948	H	
		Resende & F. 1946	H	
<i>glaucum</i>	18	La Cour unp.	H	S. Africa
<i>fulvum</i>	34	Battaglia 1954	H	N. Africa

SCILLA $x = 4, 6, 7, 8, 9, 10, 11$

<i>obtusifolia</i>	8	Martinoli 1949	—	Sard., N. Africa
<i>sibirica</i>	12	Sato 1935a	H	E. Eur., Asia M.
<i>permixta</i>	14 + 0-2B	" 1936	H	—
<i>hughii</i>	16	Maugini 1953a	—	Marettimo
<i>italica</i>	16	Dark 1934	H	S. Europe
<i>lingulata</i>	16	Sato 1942	H	Alg., Morocco
<i>peruviana</i>	16	" 1935a	H	Medit. (sic)
Cuban Lily	{ 14, 16, 22, 23, 28	Battaglia 1949a, c, '50b	H	
as <i>ughii</i>	15, 17, 19, 20, 22	Sato 1942	H	
<i>pratensis</i>	{ 28	Maude 1940	H	Croatia
	26	Sato 1942	H	
<i>autumnalis</i>	{ 14	Battaglia 1952b	H	Medit., Cauc.
	28, c. 42	Maude 1939, 1940	H	
	29	Sato 1942	H	
<i>bifolia</i>	18	" 1935a	H	Eur., Asia
<i>chinensis</i>	18, 26, 34, 35	" 1942	H	China
<i>numidica</i>	18	Battaglia 1953	—	Algeria
<i>hyacinthoides</i>	20	Sato 1935a	H	S. Europe
<i>monophylla</i>	20	Fernandes <i>et al.</i> '48	H	Portugal, Spain
<i>ramburei</i>	20	" "	—	W. Europe
<i>verna</i>	22	Maude 1940	H	"
<i>japonica</i>	26, 34, 36, 42, 44	Sato 1935a	H	Japan
<i>indica</i>	{ 30	Sheriff & M. 1946	HM	Trop. Asia
	44, 45, 46, 58	Y. S. Rao 1953a	HM	

PUSCHKINIA $x = 5$

<i>scilloides</i>	{ 10 16	Greeves, T. 1930 Sato 1942	H	Asia M., Syria
<i>v. libanotica</i>	{ 10 10 + 4B	" " Darlington 1936b	H	" "

URGINEA $x = 5$

<i>maritima</i> Sea Onion	{ 10 + 2B 20 + 1-4B, 30 20, 30, 40	Geitler 1929a, b Raghavan & V. '40 Giuffrida 1950	HM	Medit.
<i>indica</i>	20	Raghavan 1935	—	Ind., Bur., Tr. Afr.
<i>polyphylla</i>	20	" & V. '40	M	India
<i>undulata</i>	20	Martinoli 1949	H	Medit.
<i>fugax</i>	21, 24	" "	—	"

LACHENALIA $x = 7, 8, 11, 13$

(i) <i>rubida</i>	14	Moffett 1936	H	S. Africa
<i>membranacea</i>	14	" "	H	"
<i>tricolor</i>	14, 21	" "	H	"
<i>glauca</i>	28	" "	H	"
<i>pendula</i>	42	" "	H	"
(ii) <i>rosea (isopetala)</i>	14	" "	H	"
<i>elegans</i>	28	" "	H	"
(iii) <i>liliflora</i>	16	" "	H	"
<i>nervosa</i>	16	" "	H	"
<i>pallida</i>	16	" "	H	"
<i>purpureo-coerulea</i>	16	" "	H	"
<i>unicolor fragrans (versicolor)</i>	16	" "	H	"
<i>orchioides</i>	16, 17	" "	H	"
<i>pustulata</i>	32	Sato 1942	H	"
(iv) <i>unifolia</i>	22	Moffett 1936	H	"
sp.	26	" "	H	"

ENDYMION (SCILLA) $x = 8$

<i>hispanicus (S. campanulata)</i>	16	Sato 1935a	H	Spain
<i>non-scriptus</i> Bluebell (<i>S. nutans</i>)	16	" "	H	Europe

GALTONIA $x = 8$

<i>candicans</i> Summer Hyac.	16	Newton 1924	H	S. Africa
-------------------------------	----	-------------	---	-----------

DRIMIOPSIS $x = 8$

<i>maculata</i>	64	Sato 1942	H	S. Africa
<i>botryoides</i>	80	M. & S. 1935	—	"

HYACINTHUS $x = 8, 9, 14$

<i>orientalis</i> Hyacinth	16	Darlington <i>et al.</i> '51	H	Greece, Asia M.
garden forms	16-31	" "	H	"
<i>azureus</i>	18	Chiarugi 1950	H	Asia Minor
<i>amethystinus</i>	28	Darlington 1932b	H	Pyrenees
<i>pouzolzil (fastigiatus)</i>	28	Chiarugi 1950	H	Cors., Sard.

ALBUCA $x = 9$

<i>nelsoni</i>	18	Sato 1942	H	Natal
----------------	----	-----------	---	-------

MUSCARI $x = 9$

<i>alpinum</i>	18	Chiarugi 1950	H	Asia Minor
<i>argaei</i>	18	Delaunay 1926	—	Greece
<i>caucasicum</i>	18	" "	H	Caucasus
<i>comosum</i> Feather H.	18	" "	H	Medit., S.W. Asia
<i>as tenuiflorum</i>	18 + 0-2B	" "	"	"
<i>latifolium</i>	18 + 0-2B	" "	H	Asia Minor
<i>longipes</i>	18	" "	H	Palestine
<i>moschatum</i> Musk H.	18	" "	H	Asia Minor
<i>polyanthum</i>	18 + 0-2B	" "	H	"
<i>armeniaceum</i>	{ 18	Greeves, T. 1931	H	"
	{ 36	Haue 1952	"	"
<i>commutatum</i>	{ 18	Chiarugi 1950	H	Sicily
	{ 45	Delaunay 1926	"	"
<i>botryoides</i> Grape Hyacinth	c. 48	M. & S. 1935	H	Eur., S.W. Asia
	63	Sato 1942	"	"
<i>conicum</i>	36	Greeves, T. 1931	H	S. Europe
<i>pallens</i>	36	Delaunay 1926	H	Caucasus
<i>racemosum</i>	{ 36	Chiarugi 1950	"	"
	{ 45	Delaunay 1926	H	Medit., Cauc.
	{ 54	Wunderlich 1937	"	"
<i>neglectum</i>	{ 45	Delaunay 1926	H	Medit.
	{ 54	Sato 1942	"	"

CHIONODOXA $x = 9, 10$

<i>sardensis</i>	18	Greeves, T. 1930	H	Asia Minor
<i>lucillae</i>	{ 18	Müller 1912	H	"
	{ 20	Sato 1942	"	"

CAMASSIA $x = 15$

<i>esculenta</i> Quamash	30	Nakajima 1936	HR	U.S.A.
<i>cusickii</i>	30	Greeves, T. 1931	H	Oregon
<i>leichtlinii</i>	30	F. H. Smith 1942	H	California

EUCOMIS $x = 15, 16$

<i>bicolor</i>	{ 30	M. & S. 1935	H	Natal
	{ 32	Darlington 1932b	"	"
<i>autumnalis (undulata)</i>	{ 30	Koeperich 1930	H	S. Africa
	{ 60	Sato 1942	"	"
<i>comosa (punctata)</i>	60	M. & S. 1935	H	"
<i>pallidiflora</i>	60	Sato 1935a	H	"

VELTHEIMIA $x = 20$

<i>glauca</i>	40	Sato 1942	H	S. Africa
<i>viridifolia</i>	40	Coleman 1940	H	"

TRIBE II: ALLIEAE

BRODIAEA $x = 5, 6, 7, 8$

<i>californica</i>	{ 10	Johansen 1932	H	California
	{ 12	Burbank 1941	"	"
<i>stellaris</i>	12	" "	H	"
<i>minor (purdyi)</i>	{ 12, 32	" "	H	Argentina
	{ 14	Johansen 1932	"	"
<i>elegans</i>	32	Burbank 1941	H	California
<i>coronaria (grandiflora)</i>	{ 42	" "	HR	"
	{ 36	K. 1931	"	"

TRITELEIA (BRODIAEA) $x = 5, 7, 8$

<i>ixioides</i> v. <i>scabra</i>	10, 10 + B	Burbanck 1941	H	California
v. <i>analina</i>	50	" "		
<i>peduncularis</i>	14, 28	" "	H	"
<i>hyacinthina</i>	Wild Hyacinth 28	" "	H	"
<i>lactea</i>	42-48	F. H. Smith 1933	H	W: N. America
<i>laxa</i>	Grass-Nut 18, 28, 42, 48	Burbanck 1941, '44	H	California
<i>bridgesii</i>	16	" 1941	H	Cal., Oregon
<i>crocea</i>	16	" 1941	H	California
<i>hendersonii</i>	32	" 1941	H	Oregon

IPHEION (BRODIAEA, TRITELEIA) $x = 6$

<i>uniflorum</i>	{ 12 Saez 1949b	H	Argentina
	{ 12 Battaglia 1952a		

BLOOMERIA $x = 9$

<i>aurea</i>	18	Sato 1942	H	S. California
<i>crocea</i>	18	Burbanck 1944	H	California

DICHELOSTEMMA (BRODIAEA) $x = 9$

<i>volubile</i>	{ 18 Burbanck 1941	H	California
	{ 36 Johansen 1932		
<i>pulchellum</i>	Blue Dicks { 18 Burbanck 1941	H	W: U.S.A.
(<i>capitata</i>)	{ 72 Johansen 1932		
<i>congestum</i> (<i>B. pulchella</i>)	36 Burbanck 1941	H	"

BREVOORTIA (DICHELOSTEMMA) $x = 8$

<i>ida-maia</i>	Floral Fire c. 40	Johansen 1932	H	California
	Cracker 48	Burbanck 1941		

ALLIUM* $x = 7, 8, 9$ (Apomixis)

$x = 7$

<i>allegheniense</i>		14	Levan 1932	—	N. America
<i>carmeli</i>		14	Feinbrun 1950	—	Palestine
<i>cernuum</i>	Wild Onion	{ 14 16!	Levan 1935	(V)	N. America
			Brumfield 1941		
<i>moly</i> (apo.)	Lily Leek	14	Levan 1932	H	Europe
<i>ardelii</i>		14	Feinbrun 1950		
<i>hirsutum</i>		14	" "	—	Palestine
<i>narcissiflorum</i>	Narcissus O.	14	Levan 1932	H	Europe
<i>scorzoneraefolium</i>		14	Mensinkai 1940	—	S. Europe
<i>stellatum</i>	Prairie O.	14	Anderson 1931	(R)	N. America
<i>ursinum</i>	Ramsons	14	Levan 1932	HRV	Eur., N. As., Cauc.
<i>pendulinum</i>		14, 18!	" 1935	H	Eur., N. Africa
<i>amplectens</i> (apo.)	(14), 21, 28	"	1940b	—	W: U.S.A.
<i>macranthum</i>		{ 14 28	" 1934	—	Himalayas
			Mensinkai 1940		
<i>neapolitanum</i>	Daffodil O.	{ 14 21, 35 28	Levan 1935	HRV	Eur., S.W. Asia
			Kefallinos unp.		
			Feinbrun 1950		
<i>bidwelliae</i>		28	Mensinkai 1939	H	California
<i>validum</i>	Pacific O.	28	Levan 1935	—	N. America
<i>tartaricum</i>	Tartar O.	28-32	" 1931	V	E. Eur., Siberia

$x = 8$

<i>artemisiatorum</i>	16	Feinbrun 1950	—	Palestine
<i>ascalonicum</i>	Shallot & 5 spp. 16	Levan 1931	RV	cult
<i>aschersontanum</i>	16	Szelubsky 1950	—	S.W. Asia

ALLIUM (cont.)

<i>callidictyon</i>		16	Araratian & T. 1945	—	S.W. Asia
<i>canadense</i>	Tree O.	16	La Cour 1945 *	V	N. America
<i>chloranthum</i>		16	Feinbrun 1950	—	S.W. Asia
<i>coppoleri</i>		16	" "	—	" "
<i>desertorum</i>		16	" "	—	Egypt
<i>dumetorum</i>		16	Szelubsky 1950	—	Palest., Leb.
<i>fistulosum</i>	Welsh O.	16	Levan 1935	V	Siberia
<i>fuscoviolaceum</i>		16	Araratian & T. 1945	—	Caucasus
<i>fuscum</i>		16	Diannelidis 1951	—	Eur., S.W. Asia
<i>kunthianum</i>		16	Araratian & T. 1945	—	Caucasus
<i>lusitanicum</i>	Perenn. Welsh O.	16	La Cour 1945 *	V	Medit.
<i>materculae</i>		16	Araratian & T. 1945	—	Caucasus
<i>meteoricum</i>		16	Diannelidis 1951	—	Greece
<i>modestum</i>		16	Feinbrun 1950	—	S.W. Asia
<i>moschatum</i>		16	Billeri 1954	—	Eur., S.W. Asia
<i>pallasii (pallyssium)</i>		16	Ono 1935	—	Siberia
<i>proliferum</i>		16	" "	RV	Persia, Bal.
<i>pyrenaicum</i>		16	" "	—	Pyrenees
<i>sativum</i>	Garlic & 17 spp.	16	Levan 1935	SpV	C. Asia
<i>stamineum</i>		16	Diannelidis 1951	—	S.W. Asia
<i>tel-avivense</i>		16	Szelubsky 1950	—	Palestine
<i>thunbergii</i>		16	Ono 1935	—	China, Japan
<i>viviparum</i>	& 11 spp.	16	Mensinkai 1940	—	Siberia
<i>ammophilum</i>		16, 32	Levan 1935	—	Europe
<i>carinatum</i>		16, 24, 25, 26	Woess 1947	—	"
<i>cepa</i>	Garden O.	16, 32	D'Amato 1948	RV	cult, Persia
<i>margaritaceum</i>		16, 32	Mensinkai 1940	—	Eur., S.W. Asia
<i>nipponicum</i>		{ 16	Ono 1935	—	Japan
		{ 32	Katayama 1936		
<i>odorum</i>	Fragrant-Fl. G.	16, 32	Håkansson 1951	H(V)	Siberia
<i>ramosum (odorum)</i>		16, 32	La Cour 1945 *	H	"
<i>schoenoprasum</i>	Chives	16, 24, 32	Levan 1936	V	N, Temp.
<i>scorodoprasum</i>	Racambol	16, 24	Woess 1947	RV	Eur., Cauc., Syria
<i>victoralis</i>		{ 16	Levan 1935		
		{ 32	M. & S. 1935	—	S. Eur., Asia
<i>yunnanense (mairei)</i>		16, 32	Levan 1935	—	China
<i>angulosum</i>	Mouse Garlic	16-100 !	" "	V	Siberia
<i>nutans</i>		16-108 !	" "	—	"
<i>condensatum</i>		17	Sato 1942	—	"
<i>ampeloprasum</i>	Wild Leek	32	La Cour 1945 *	V	Medit., S.W. Asia.
<i>bakeri</i>		32	Katayama 1936	—	China, Japan
<i>ciliare</i>		32	Ono 1935	—	Eur., S.W. Asia
<i>cyaneum</i>		32	Mensinkai 1940	H	China
<i>deseglisei</i>		32	" 1939	—	Europe
<i>porrum</i>	Leek	32	Levan 1931	V	cult, Persia
<i>rotundum</i>		32	" "	—	Eur., Asia M.
<i>sikkimense</i>		32	" "	—	Himalayas
<i>splendens</i>		32	Sakai 1934	H	Siberia
<i>tuberosum</i>	Gynmig	32	La Cour 1945 *	V	Him., China, Jap.
<i>oleraceum</i>	Field Garlic	{ 32	Levan 1937b	Sp	Eur., Cauc.
		{ 40	Woess 1947		
<i>vineale</i>	Crow G.	{ 32	Ono 1935	SpV	Eur., Cauc., Leb.
		{ 40	Fernandes et al. '48		

ALLIUM (cont.)

<i>roseum</i>	32	Levan 1935	V	Medit.
<i>v. bulbiferum</i>	48	Messeri 1931		
<i>senescens</i>	32	Ono 1935	R	Eur., Siberia
	48	Mensinkai 1940		
<i>babingtonii (ampeloprasum)</i>	40	Ono 1935	V	Ireland, S.W. Eng.
	48	Maude 1940		
<i>x = 9</i>				
<i>karataviense</i>	18	Levan 1935	H	Turkestan
<i>pseudoflavum</i>	18	Araratian & T. 1945	—	Caucasus
<i>triquetrum</i>	18	Levan 1935	—	Eur., N. Africa
<i>zebdanense</i>	18	" "	—	Syria, Armenia

NOTHOSCORDUM (ALLIUM) *x* = 8, 9 (Triploids Apomictic)

<i>fragrans</i>	16, 24	Messeri 1931		
	18	Levan 1935	HSp	Mexico
	16-22	Garber 1944		
	19	D'Amato 1949c		
<i>striatum</i>	16	Levan 1935	—	S.E.: U.S.A.,
<i>as bivalve</i>	18	Beal 1932		Mexico

CALOSCORDUM *x* = 8

<i>neriniflorum</i>	16, 17	Sato 1942	—	China
---------------------	--------	-----------	---	-------

MILLA *x* = 13?

<i>biflora</i>	39	Sato 1942	H	Mexico
----------------	----	-----------	---	--------

TRIBE III: TULIPEAE

CALOCHORTUS *x* = 6, 7, 8, 9, 10

(i) <i>superbus</i>	12, 14	Beal & O. 1943	H	California
<i>catalinae</i>	14	" "	H	"
<i>flexuosus</i>	14	" "	H	Utah
<i>leichtlinii</i>	14	" "	H	W: N. America
<i>palmeri</i>	14	" "	H	California
<i>splendens</i> Lilac M.L.	14	" "	H	"
<i>venustus</i> Wh. Mari- posa L.	14 + 0-1B	" "	H	"
<i>luteus</i> Sego Lily	14 + 0-1B, 20, 21	" "	HR	"
<i>davidsonianus</i>	28	" "	H	"
<i>vesta</i>	28	" "	H	N. America
(ii) <i>macrocarpus</i>	14	" "	H	W: N. America
(iii) <i>clavatus</i>	16	" "	H	California
<i>kennedyi</i>	16	" "	H	"
<i>nuttallii</i> Sego Lily	16	" "	H	W: N. America
<i>aureus</i>	32	" "	H	S.W: U.S.A.
(iv) <i>ambiguus</i>	18	" "	H	W: N. America
<i>gunnisoni</i>	18	" "	H	S.W: U.S.A.
(v) <i>plummerae</i>	18	" "	H	California
<i>weedii</i>	18	" "	H	"
(vi) <i>barbatus</i>	36	" "	H	Mexico
(vii) <i>albus</i>	20	" "	H	California
<i>amabilis</i> Golden Globe T.	20	" "	H	"
<i>amoenus</i> Purple Gl. T.	20	" "	H	"
<i>pulchellus</i>	20	" "	H	"
(viii) <i>apiculatus</i>	20	" "	H	W: N. America

CALOCHORTUS (cont.)

<i>elegans</i>	20	Beal & O. 1943	H(R)	Oregon
<i>lobbii</i>	20	" "	H	N. America
<i>monophyllus</i> Yellow Star T.	20	" "	H	California
(<i>benthami</i>)				
<i>tolmiei</i> (<i>maweanus majus</i>)	20	" "	H	Oregon
(ix) <i>nudus</i>	20	" "	H	California
<i>umbellatus</i>	20	" "	H	"
<i>uniflorus</i>	40	" "	H	"
(x) <i>howellii</i>	20	" "	H	Oregon
<i>lyallii</i>	20	" "	H	W: N. America
<i>nitidus</i>	20	" "	H	" "
<i>persistens</i> (<i>greenei</i>)	20	" "	H	" "
<i>longebarbatus</i>	20, 30	" "	H	" "
<i>pavonaceus</i> (<i>douglasianus</i>)	40	" "	H	" "
<i>lilacinus</i>	40	Fanshawe unsp.	H	" "

FRITILLARIA x = 12: by fusion and fragmentation, 9, 13

OLD WORLD GROUPS (little or no heterochromatin)

(i) <i>ruthenica</i>	18	Darlington 1936c	H	S.E. Eur., Cauc.
<i>nigra</i> (<i>tenella</i> , <i>caussolensis</i>)	18 + 0-3B	La Cour 1951a	—	S. Eur., Cauc.
(ii) <i>acmopetala</i>	24	Darlington 1936c	H	Asia M., Syria
<i>askabadensis</i>	24	" "	—	Transcaucasia
<i>aurca</i>	24	La Cour 1951a	—	Asia Minor
<i>camtschatscensis</i>	24, 36	Matsuura 1935	H	N.W. Amer., N.E. Asia, Japan
<i>caucasica</i> (<i>armena</i>)	24	La Cour 1951a	—	Cauc., Asia Min.
<i>cirrhusa</i>	24	" "	H	Himalayas
<i>citrina</i>	24	Darlington 1936c	H	Asia Minor
<i>conica</i>	24	La Cour 1951a	—	Greece
<i>dasyphylla</i>	24, 36	Darlington 1936c	H	Asia Minor
<i>drenovskii</i>	24	" & L.C. '41	—	Balkans
<i>eggeri</i>	24	" 1936c	—	N.W. Persia
<i>elwesii</i>	24	" "	—	W. Asia Minor
<i>gracilis</i>	24	" "	—	Dalm., Monten.
<i>graeca</i>	24	La Cour 1951a	—	Greece, S. Maced.
<i>hispanica</i>	24	Darlington 1936c	—	Spain
<i>imperialis</i> Crown	24 + 0-12B	" "	H	Persia, Himal.
<i>imperialis</i>				
<i>involutrata</i>	24	" & L.C. '41	—	N.W. Italy, S.E. France
<i>karadaghensis</i>	24	" 1936c	—	N. Persia
<i>latifolia</i>	24, 36	" "	H	Caucasus
<i>libanotica</i>	24	" "	—	Syria, Palestine
<i>lusitanica</i>	24	La Cour 1951a	—	Portugal
<i>macrandra</i>	24	" "	—	Greece
<i>meleagris</i> Snake's Head L.	24	Darlington 1936c	H	Cauc., N. & C. Europe (?)
<i>meleagroides</i>	24	" "	H	C. Asia, S. Russia, Bulgaria
<i>messanensis</i>	24	La Cour 1951a	—	Sicily
<i>obliqua</i>	24 + 2B	Darlington 1936c	H	Greece
<i>oranensis</i>	24	" "	—	N.W. Morocco, Algeria, Tunis
<i>pallidiflora</i>	24	" "	H	S. Siberia
<i>pontica</i>	24	" "	H	S. Bal., Asia M.

FRITILLARIA (cont.)

<i>pyrenaica</i>	24, 36	La Cour 1951a	H	Pyrenees
<i>tubiformis</i>	24	" " "	H	Marit. Alps
<i>verticillata (thunbergii)</i>	24	Sato '42, Suzuka '50a	H	C. As., China, Jap.

NEW WORLD GROUPS (much heterochromatin)

(iii) <i>biflora</i>	Mission Bells	24	La Cour 1951a	H	California
<i>purdyi</i>		24	Beetle '44, La C. '51a	H	"
<i>lilacea</i>		24	"	H	"
<i>mutica</i>		24	La Cour 1953	H	"
<i>falcata</i>		{ 24, 25	Beetle 1944	H	"
			La Cour 1951a	H	"
<i>pluriflora</i>	Adobe L.	{ 24 + 2B	Beetle 1944	H	"
			Darlington 1936c	H	"
<i>lanceolata</i>		{ 24 + 1B, 36	" "	H	W: N. America
		{ 24 + 0-8B, 36, 48	Beetle 1944	H	W: N. America
<i>recurva (coccinea)</i>		{ 24	" "	H	S. Ore.—Calif.
		{ 24 + 1B, 36	Darlington 1936c	H	S. Ore.—Calif.
<i>phaeanthera</i>		{ 24	" "	—	California
		{ 36	Beetle 1944	—	California
(iv) <i>pudica</i>		26, 39	Darlington 1936c	H	W: N. America

KOROLKOWIA (FRITILLARIA) $x = 12$

<i>sewerzowi</i>	24	La Cour 1951a	—	C. Asia
------------------	----	---------------	---	---------

NOMOCHARIS $x = 12$

<i>mairei</i>	24	Darlington 1936b	H	S.W. Szechuan, N. Yunnan
<i>pardanthina</i>	24	" "	H	W. Yunnan
<i>saluenensis</i>	24	" "	H	N.W. Yun., S.E. Tibet, N. Assam
<i>nana</i>	48	" "	H	Himalayas

NOTHOLIRION $x = 12$

<i>campanulatum</i>	24	La Cour 1952	H	Up. Bur., Tibet, S.W. China
<i>macrophyllum</i>	24	La Cour unpub.	H	Himalayas
<i>thompsonianum</i>	24	Wylie unpub.	H	N. Him.—Afgh.

CARDIOCRINUM (LILIUM) $x = 12$

<i>cordatum (L. cordifolium)</i>	24	Sansome & L.C. '34	H	Japan
<i>giganteum</i>	24	M. Sato 1932	H	Himalayas

LILIUM $x = 12$

<i>amabile</i>		24	Sansome & L.C. '34	H	Korea
<i>auratum</i>	Goldband L.	24 + 0-1B	Stewart 1947	HR	Japan
<i>bolanderi</i>		24	Sansome & L.C. '34	H	California
<i>brownii</i>		24	Sato 1932	H	China
<i>bulbiferum</i> v. <i>croceum</i>		24	Sansome & L.C. '34	H	S. Europe
<i>callosum</i>		24	Stewart 1947	H	C. China, Japan
<i>canadense</i>	Meadow L.	24 + 0-1B	Stewart 1943, 1947	HR	E: N. America
<i>candidum</i>	Madonna L.	24	Sansome & L.C. '34	H	S. Eur., Syria
<i>catesbaei</i>		24	Stewart 1947	H	S.E: U.S.A.
<i>cernuum</i>		24	Sansome & L.C. '34	H	N. Asia
<i>chalcedonicum</i>	Sc. Turk's Cap	24	" "	H	Greece
<i>columbianum</i>		24	" "	H	W: N. America
<i>concolor</i> (<i>cordilum</i>)		24	M. Sato 1932	HR	C. China

LILIUM (cont.)

<i>v. pulchellum</i>		24	Kumazava & K. '47	H	N.E. Asia
<i>dauricum</i>	Candlestick L.	24	M. Sato 1932	H	"
<i>davidi</i>		24	Beal 1942	H	W. China
<i>v. willmottiae</i>		24 + 0-1B	Stewart 1943, 1947	H	C. & W. China
<i>duchartrei</i>		24	Stewart 1947	H	W. China
<i>formosanum</i>		{ 24 + 0-2B (48)	M. Sato 1932 Emsweller & B. 1940	H	Formosa
<i>grayi</i>		24	M. Sato 1932	H	S.E.: U.S.A.
<i>hansonii</i>		24	" "	H	Korea
<i>henryi</i>		{ 24 + 1-2B 24 + 0-2B	Mather 1935 Stewart 1947	H	C. China
<i>humboldtii</i>		24	Sansome & L.C. '34	H	California
<i>japonicum</i>		24 + 1-2B	" "	HR	Japan
<i>leichtlinii v. maximowiczii</i>		24	M. Sato 1932	H	Japan, Korea
<i>leucanthum</i>				H	China
<i>v. chloraster</i>		24	Stewart 1947	H	Hupeh
<i>longiflorum</i>	Easter L.	24	Goodspeed <i>et al.</i> '35 (48) Emsweller & L. 1943	H	Japan
<i>martagon</i>		24 + 0-3B	Fernandes 1950b	HR	S. Europe
<i>medeoloides</i>	Wheel L.	24	Sansome & L.C. '34	H	Japan
<i>michauxii (carolinianum)</i>		24	Stewart 1947	H	S.E.: U.S.A.
<i>michiganense</i>		24	" "	H	E: N. America
<i>monodelphum</i>		24	" "	H	Caucasus
<i>neilgherrense</i>		24	Abraham 1939	H	Mtns, S. India
<i>occidentale</i>		24	Stewart 1947	H	S. Ore., N. Calif.
<i>pardalinum</i>	Leopard L.	24	Sansome & L.C. '43	H	California
<i>v. angustifolium (roezlii)</i>		24	" "	H	"
<i>parryi</i>		24	Stewart 1947	H	Calif., Arizona
<i>philadelphicum</i>	Orange Cup L.	24	Sansome & L.C. '34	H	E: N. America
<i>philippinense</i>		24	" "	H	Philippines
<i>pumilum (tenuifolium)</i>		24	" "	H	N.E. Asia
<i>Coral L.</i>		24 + 0-2B	Stewart 1943		
<i>pyrenaicum</i>	Yellow T. C.	24	Sansome & L.C. '34	H	Pyrenees
<i>regale</i>	Royal L.	24	" "	H	W. China
<i>sargentiae</i>		24 + 0-1B	Stewart 1947	H	Szechuan
<i>speciosum</i>		24	Sansome & L.C. '34	HR	Japan
<i>sulphureum (myriophyllum)</i>		24	Stewart 1947	H	W. China—Up. Burma
<i>superbum</i>	Turks' Cap	24	" "	H	E: U.S.A.
<i>tsingtauense</i>		24 + 0-1B	" 1943, 1947	H	E. China, Korea
<i>wardii</i>		24	" 1947	H	S.E. Tibet
<i>tigrinum</i>	Tiger L.	{ 24 36 + 0-1B	M. Sato 1932 Sansome & L.C. '34	HR	China, Japan
<i>v. flaviflorum</i>		24	Kumazava & K. '47	H	Kyushu
(as <i>lancifolium v. fl.</i>)					
<i>hollandicum (umbellatum)</i>		24	Sansome & L.C. '34	H	<i>cult</i>
(<i>bulbiferum</i> × <i>maculatum</i> ?)					
<i>maculatum (elegans)</i>				H	Japan, <i>cult</i>
<i>v. batemanniae</i>		24 + 1B	Stewart 1943	H	<i>cult</i>
(<i>dauricum</i> × <i>concolor</i> ?)					
<i>testaceum</i>	Nankeen L.	24	Sansome & L.C. '34	H	"
(<i>chalcedonicum</i> × <i>candidum</i>)					

TULIPA* x = 12

S. 1. ERIOSTEMONES

<i>australis</i>	& 11 spp.	24	Upcott & L. C. '36	H	S Eur., N. Afr.
<i>saxatilis</i>		36	" "	H	Crete

TULIPA (cont.)

<i>sylvestris</i>	48	Upcott & L. C. '36	H	Europe
<i>turkestanica</i>	48	" "	H	S. Russia
<i>whittalli</i>	48	" "	H	Asia Minor

S. 2. LEIOSTEMONES (brackets enclose species with mere colour differences)

(i) <i>batalini</i> & 2 spp.	24	Upcott & L. C. '36	H	Bokhara
{ <i>chrysantha</i>	24, 48	" "	H	Persia
{ <i>clusiana</i> Lady Tulip	24	" "	H	Kashmir
	48	" "	H	Himalayas
	60	" "	H	Medit.
(ii) <i>altaica</i>	24	" "	H	C. Asia
<i>ferganica</i>	24	La Cour *	H	"
<i>ostrowskiana</i>	24	Upcott & L. C. '36	H	E. Turkestan
<i>sprengeri</i>	24	" "	H	Asia Minor
<i>kolpakowskiana</i>	24, 48	" "	H	Turkestan
<i>korolkowi</i>	24, 48	" "	H	"
(iii) <i>borsczowi</i>	24 + 0-6B	" "	H	Pers., C. Asia
<i>cypria</i> & 5 spp.	24	" "	H	Cyprus
<i>aleppensis</i>	36	" "	H	Syria
<i>lanata</i>	36	" "	H	C. Asia
<i>praecox</i>	36	" "	H	S. Fr., N. Italy
(iv) { <i>armena</i>	24	" "	H	Asia Minor
{ <i>galatica</i>	24 + 2-12B	" "	H	"
<i>boetica</i>	24	" "	H	Greece
<i>planifolia</i>	24	" "	H	Europe
<i>rhodopea</i>	24	" "	H	Bulgaria
<i>suaveolens</i>	24	" "	H	S. Russ., Asia M.
<i>gesneriana</i> Garden Tulip	24, 36	" "	H	cult, Persia
(v) <i>kaufmanniana</i> & 8 spp.	24	" "	H	Turkestan

AMANA (TULIPA) $x = 12$

<i>latifolia</i>	24	Sato 1942	—	Japan
<i>edulis</i>	48	"	R	"

ERYTHRONIUM* $x = 12$

<i>dens-canis</i> Dog's Tooth V.	24	Hruby 1934b	H	Eur., N. Asia
<i>californicum</i>	24	La Cour *	H	California
<i>hendersonii</i> & 3 spp.	24	F. H. Smith 1955	H	Oregon
<i>grandiflorum</i> (<i>japonicum</i>)	24	Sato 1942	H	W: N. America
<i>revolutum</i>	24	F. H. Smith 1955	H	" "
<i>albidum</i>	44	Cooper 1939	H	E: N. America
<i>americanum</i>	48	Haque 1951	H	" "

GAGEA $x = 12$

<i>graminifolia</i>	24	Romanov 1936	—	Transcasp.
<i>minima</i>	24	Westergaard 1936	—	Eur., N. Asia
<i>soleirolii</i>	36	Martinoli 1950a	—	S. Europe
<i>tenera</i>	36	Romanov 1936	—	Turkestan
<i>arvensis</i>	48	T. 1938	H	Medit.
<i>sylvatica</i> (<i>lutea</i>)	72	Westergaard 1936	H	Eur.—Himal.
<i>fistulosa</i>	c. 80	Bianchi 1946	H	Tyrol
<i>spathacea</i>	c. 102	Westergaard 1936	—	Europe

LLOYDIA $x = 12$

serotina

{ 24	Newton 1927,	H	Europe
24	Bianchi 1946		

TRIBE IV: KNIPHOFIEAE

KNIPHOFIA $x = 6$

<i>abyssinica</i>	12	Janaki-Ammal 1950	—	Abyssinia
<i>breviflora</i>	12	" "	H	S. Africa
<i>burchellii</i>	12	Moffett 1932b	H	"
<i>caulescens</i>	12	Janaki-Ammal 1950	H	"
<i>comosa</i>	12	" "	H	Abyssinia
<i>foliosa</i>	12	" "	H	"
<i>galpini</i>	12	" "	H	Transvaal
<i>kirkii</i>	12	" "	H	Trop. S.W. Afr.
<i>leichtlinii</i>	12	Moffett 1932b	H	Abyssinia
<i>macowani</i>	12	Janaki-Ammal 1950	H	S. Africa
<i>modesta</i>	12	" "	H	"
<i>multiflora</i>	12	" "	H	"
<i>natalensis</i>	12	Moffett 1932b	H	"
<i>nelsonii</i>	12	" "	H	"
<i>northiae</i>	12	" "	H	"
<i>praecox</i>	12	Janaki-Ammal 1950	H	"
<i>sarmentosa</i>	12	Moffett 1932b	H	"
<i>zululandiae</i>	12	Janaki-Ammal 1950	—	"
<i>uvaria (aloides)</i>	R. Hot Poker 12, 13	Webber 1932	H	"
<i>snowdenii (3x)</i>	(12), 18, (24)	Janaki-Ammal 1950	H	Uganda

TRIBE V: AGAPANTHEAE

TULBAGHIA $x = 6$

<i>aloides</i>	12	Sato 1942	—	S. Africa
----------------	----	-----------	---	-----------

AGAPANTHUS $x = 15$

<i>orientalis</i> African L.	30	Darlington 1933a	H	S. Africa
<i>(umbellatus)</i>				

TRIBE VI: ALOINEAE

CHAMAEALOE $x = 7$

<i>africana</i>	14	Viveiros 1949	—	S. Africa
-----------------	----	---------------	---	-----------

LEPTALOE $x = 7$

<i>albida</i>	14	Müller 1945	—	S. Africa
<i>saundersii</i>	14	" "	—	"

LOMATOPHYLLUM $x = 7$

<i>orientale</i>	14	Resende 1937	—	Mascarene Is.
------------------	----	--------------	---	---------------

POELLNITZIA $x = 7$

<i>rubriflora</i>	14	Viveiros 1949	H	S. Africa
-------------------	----	---------------	---	-----------

ALOE* $x = 7$

<i>arborescens</i>	14	Snoad 1951	H	S. Africa
<i>aristata</i>	14	" "	H	"
<i>brevifolia</i>	14	" "	H	"
<i>ferox</i>	14	Sato 1942	HM	"

ALOE (cont.)

<i>greenii</i>	14	Snoad 1951	H	S. Africa
<i>humilis</i>	14	Sato 1942	H	"
<i>plicatilis</i>	14	Snoad 1951	HM	"
<i>saponaria</i>	14	" "	HM	"
<i>striata</i>	14	Müller 1945	H	"
<i>succotrina</i>	14	Resende 1937	HM	"
<i>variegata</i>	14	Snoad 1951	H	"
<i>vera</i>	14	Marshak 1934	HMV	Medit.

<i>ciliaris</i>	{ 42	Schnarf & W. 1939,	H	S. Africa
	42	Snoad 1951		
f. <i>gigas</i> (5x)	35!	Resende 1938		

110 spp. 14 — Africa

Ferguson 1926, Fernandes 1931, Kondo & M. 1943, Johansen 1929d, Müller 1945, Resende 1937, Sato 1937, 1942, Suto 1936, Snoad 1951

ASTROLOBA (APICRA) $x = 7$

<i>aspera</i>	14	Ferguson, 1926	H	S. Africa
<i>deltolidea</i>	14	Resende 1937	H	"
<i>foliolosa</i>	14	" "	H	"
<i>spiralis</i>	14	" "	H	"
<i>bicarinata</i> (3x)	21	" "	H	"
<i>pentagona</i>	28	" "	H	"

GASTERIA* $x = 7$

<i>verrucosa</i>	14	Resende 1937	H	S. Africa
<i>maculata</i>	{ 14	" " "	H	"
	28	Sato 1942		
<i>nigricans</i>	{ 14	" "		
	(21)	Riley 1948a	H	"
	28	Ferguson 1926		
<i>cheilophylla</i>	14, 28	Sato 1937	H	"
44 spp.	14		H	"

Ferguson 1926, Marshak 1934, Resende 1937, Sato 1942, Snoad 1951, Suto 1936

GASTERIA \times ALOE $x = 7$

4 hybrids	{ 14	Sato 1937,	—	<i>expt.</i>
	14	Riley 1948b, 1950		
1 hybrid	28	Sato 1937		

HAWORTHIA* $x = 7$

<i>aristata</i>	14	Snoad 1951	H	S. Africa
<i>cymbiformis</i>	14	" "	H	"
<i>fasciata</i>	14	Sato 1942	H	"
<i>glabrata</i>	14	Snoad 1951	H	"
<i>margaretifera</i>	14	Sato 1942	H	"
<i>maughanii</i>	14	Snoad 1951	H	"
<i>planifolia</i>	14	" "	H	"
<i>tortuosa</i>	14	" "	H	"
<i>truncata</i>	14	" "	H	"
61 species	14		H	"

Ferguson 1926, Kondo & M. 1943, Pinto-Lopes 1944, 1946, Resende 1937, Resende & F. 1946, Sato 1937, 1942, Snoad 1951

HAWORTHIA (cont.)

<i>attenuata</i>	{ 14	Snoad 1951	H	S. Africa
	28	Kondo & M. 1943		
<i>limifolia</i>	14, 28	Resende 1937	H	"
<i>herrei</i>	{ 14	Snoad 1951	H	"
	42	Pinto-Lopes 1944		
<i>reinwardtii</i>	{ 14, 21, 28	Snoad 1951, 1952	H	"
	42	Sato 1942		
<i>tessellata</i>	{ 14, 28,	Resende 1937		
	28, 42, 56, c. 58		H	"
<i>resendeana</i> (3x)	c. 61, 63	Viveiros 1949		
	21	Snoad 1952		
<i>carissoi</i>	28	Pinto-Lopes 1944	H	"
<i>chalinii</i>	28	Resende 1937	H	"
<i>greenii</i>	28	Pinto-Lopes 1944	H	"
<i>subfasciata</i>	c. 28	Ferguson 1926	H	"
<i>glauca</i>	{ 28	Snoad 1951	H	"
	29	Resende 1939		
<i>brotereana</i>	35	Pinto-Lopes 1944	H	"
<i>rewendetii</i>	35	" "	H	"
<i>rubrobrunea</i>	35	Snoad 1951	H	"
<i>sampaiana</i>	35, 36	" "	H	"
<i>armstrongii</i>	42	Pinto-Lopes 1944	H	"
<i>coarctata</i>	42	Snoad 1951	H	"
<i>coarctatoidea</i>	42	" "	H	"

TRIBE VII: ASPHODELEAE

EREMURUS x = 7

<i>altaicus</i>	14	Burström 1929	H	Manch., Siberia
<i>elwesii</i>	14	Sato 1942	H	cult
<i>himalaicus</i>	14	Burström 1929	H	Himalayas
<i>robustus</i>	14	" "	H	Turkestan
<i>spectabilis</i>	14	Upcott 1936a	HV	Asia M., Persia

BULBINELLA x = 7

<i>robusta</i>	14	Hair unp.	—	S. Africa
----------------	----	-----------	---	-----------

CHRYSOBACTRON (BULBINELLA) x = 7

<i>hookeri</i>	14	Hair 1942	H	New Zealand
<i>rossii</i>	14	Hair unp.	H	Campbell Is.

ASPHODELINE x = 7

<i>lutea</i>	Asphodel	{ 28	Sato 1942,	H	Italy—Arabia
		28	La Cour 1952		

ASPHODELUS x = 7

<i>fistulosus</i>	28	Lorenzo-Andreu 1951	H	S. Eur.—Afghan.
<i>albus</i>	56	La Cour 1952	H	S. Europe
<i>ramosus</i>	{ 56	" "	H	"
	52	Sato 1942		
<i>lusitanicus</i>	56	Fernandes 1950b	—	Portugal

ANTHERICUM x = 7, 8

<i>ciliatum</i>	14	M. & S. 1935	—	Venezuela
<i>roseum</i>	32	Stenar 1928	—	Tanganyika

ANTHERICUM (cont.)

<i>ramosum</i>		32	Elvers 1932a	H	W. & S. Europe
		30	Bowden 1945a		
<i>liliago</i>	St. Bernard Lily	32	Fernandes 1950b	H	S. Eur., N. Afr.
		64	Elvers 1932a		

CHLOROPHYTUM (ANTHERICUM) $x = 7, 8$

<i>inornatum</i>		14	Baldwin & S. 1951c	—	W. Trop. Africa
<i>laxum</i>		14	" "	—	O.W. Tropics
<i>natalensis</i>		14	Sato 1942		
<i>ursabiriensis</i>		14	" "		
<i>comosum (sternbergianum)</i>		28	R. Yamazaki 1936	H	S. Africa
<i>elatum</i>		28	Sato 1942	H	"
<i>orchidastrum</i>		28	Baldwin & S. 1951c	—	O.W. Tropics
<i>viviparum</i>		28	" "	—	" "
<i>alismifolium</i>		16	" "	—	Trop. Africa
<i>sternbergianum</i>		32	Schnarf & W. 1939	H	S. Africa

BULBINE $x = 7, 12, 13$

<i>annua</i>	14	Straub 1938	H	S. Africa
<i>asphodeloides</i>	14	" "	—	"
<i>caulescens</i>	14	" "	H	"
<i>latifolia</i>	14	Snoad unpub.	—	"
<i>longiscapa</i>	14	" 1952	—	"
<i>mesembryanthemoides</i>	14	" "	—	"
<i>praemorsa</i>	14	Straub 1938	—	"
<i>rostrata</i>	14	Snoad unpub.	—	"
<i>succulenta</i>	14	" 1952	—	"
<i>tetraphylla</i>	14	Straub 1938	—	"
<i>triebneri</i>	14	" "	—	"
<i>bulbosa</i>	24, 48	Gulline unpub.	H	E. Australia
<i>semibarbata</i>	26	Straub 1938	H	Australia

ECHEANDIA $x = 8$

<i>terniflora</i>	16	Schnarf & W. 1939	H	C. America
-------------------	----	-------------------	---	------------

SIMETHIS $x = 8$

<i>planifolia</i>	48	Fernandes 1950b	H	S.W: Eur., N. Afr.
-------------------	----	-----------------	---	--------------------

CHLOROGALUM $x = 9$

<i>pomeridianum</i>	36	Cave 1949	H	California
---------------------	----	-----------	---	------------

ALECTORURUS $x = 10$

<i>yedoensis</i>	40	Sato 1942	H	Japan
------------------	----	-----------	---	-------

ANEMARRHENA $x = 11$

<i>asphodeloides</i>	22	Sato 1942	H	N. China
----------------------	----	-----------	---	----------

ARTHROPODIUM $x = 11$

<i>candidum</i>	22	Hair 1942	H	New Zealand
<i>milleflorum</i>	22	W. D. Jackson unpub.	—	Australia
	44	Hair 1942		
<i>cirrhatum</i>	36	Sato 1942	H	New Zealand

CHAMAESCILLA $x = 11$

<i>corymbosa</i>	44	W. D. Jackson unpub.	—	Australia
------------------	----	----------------------	---	-----------

DICHOPOGON (ARTHROPODIUM) $x = 11$
strictus 66 Gulline unsp. H S. Australia

PARADISEA $x = ?$

<i>liliastrum</i>	St. Bruno Lily	{ 30 Bowden 1945a		
		{ 32 Stenar 1928	H	S. Europe
		{ 48 Sato 1942		
<i>lusitanica</i>	32, 64	Fernandes 1950b	—	Portugal

THYSANOTUS $x = ?$
patersoni c. 80 W. D. Jackson unsp. — S. Australia

TRIBE VIII: UVULARIEAE

UVULARIA $x = 7$
grandiflora 14 Anderson & W. 1934 H E.N. America
perfoliata 14 " " H " "
sessile 14 " " H " "

OAKESIELLA (OAKESIA) $x = 8$
sessilifolia 16 Sato 1942 H N. America

LITTONIA $x = 9, 11$
modesta { 18 La Cour unsp. H S. Africa
 { 22 Sato 1942

GLORIOSA $x = 11$
simplex 22 E.K.J.* HM Mozambique
rothschildiana { 22 E.K.J.* Tjio 1948 H Trop. Africa
 { 66 La Cour 1951b
superba { 22 E.K.J.* Tjio 1948 HM Trop Asia & Afr.
 { 88 La Cour 1951b
carsonii 66 La Cour 1952 H Trop. Africa
verschurii 88 " " H ?

TRIBE IX: POLYGONATEAE

DISPORUM $x = 6, 8, 9, 11$
maculatum 12 Ownbey 1953 — N. America
sessile 16 M. & S. 1935 H Japan
smilacinum 16 Hasegawa 1932 — Japan, Siberia
smithii 16 Jones 1951 — W: N. America
pullum 16 Hasegawa 1932 H Ind., E. Ind., Ch.
hookeri 18 Jones 1951 H California
lanuginosum 18 " " H E: N. America
trachycarpum 22 " " H N.W: N. Amer.

CLINTONIA $x = 7, 8$
andrewsiana 28 Walker 1944 H California
umbellulata 28 " " H N. America
uniflora Queen Cup 28 " " H "
udensis (alpina) 28 M. & S. 1935 H E. Asia, Himal.
borealis 32 Walker 1944 H N. America

STREPTOPUS $x = 8$
japonicus 16 + 2B M. & S. 1935 H Sib., N. Amer.
amplexifolius 32 " " H N. Temp.
streptopoides c. 54 " " H Japan

MAIANTHEMUM $x = 8?, 9?$

<i>bifolium</i>	May L.	{ 30, 36, 42	Stenar 1935		
		42	L. & L. 1942	H	N. Temp.
		54	Sato 1942		
<i>dilatatum</i>		{ 32?	M. & S. 1935	—	W: N. Amer.,
		36	Palmgren 1943		Japan
		54	Sato 1942		

SMILACINA $x = 9$

<i>amplexicaulis</i>		36	Rattenbury 1948	—	W: N. America
<i>japonica</i>		36	M. & S. 1935	H	Japan
<i>sessilifolia</i>		36	Cave 1948a	—	W: N. America
<i>stellata</i>		36	Stenar 1935	H	„ „

POLYGONATUM $x = 9, 10, 11, 14$

<i>falcatum</i>		{ 18	Berg 1933	—	Japan
		20	Sato 1942		
<i>latifolium</i>		{ 18	Hasegawa 1933	H	Europe
		20	Suomalainen 1947		
<i>giganteum</i>	18, 28, 29, 30		„ „	H	N. America
<i>multiflorum</i>	{ 18, 24		Eigsti 1942		
Solomon's Seal	18, 30		Dark, M. 1939	HV	N.Temp.
	18, 20, 28		Soumalainen 1947		
<i>cobrense</i>		20	Therman 1950	—	N. America
<i>humile</i>		20	Hasegawa 1933	H	Eur., Siberia
<i>lasinianthum</i>		20	„ „	—	Japan
<i>maximowiczii</i>		20	M. & S. 1935	—	„
<i>maximum</i>		20	Suomalainen 1947	—	
<i>silvicolum</i>		20	Hasegawa 1933	—	„
<i>sibiricum</i>		{ 20, 21	Suomalainen 1947	—	Himal., N. Asia
		26	Therman 1953		
<i>japonicum</i>	Amatokoro	{ 20	Hasegawa 1933	HV	Japan
		29	Suomalainen 1947		
<i>biflorum</i>	Small S.S.	20, 40	Therman 1950	H	E. Asia
<i>pubescens</i>		20, 40	„ „	—	„
<i>odoratum</i>	Solomon's Seal	{ 20	Suomalainen 1947	HMV	Eur., N. Asia
(<i>officinale</i>)		26-30	Maude 1939		
<i>commutatum</i> (<i>giganteum</i>)		{ 20, 40, 60	Therman 1950	—	N. America
		28	Suomalainen 1947		
<i>canaliculatum</i>		40	Eigsti 1942	—	E. Asia
<i>hondoense</i>		22?	M. & S. 1935	—	Japan
<i>roseum</i>		28	Therman 1953	H	Siberia
<i>verticillatum</i>		{ 27, 28	Berg 1933	H	Eur., N. Asia
		30, 84	Dark, M. 1939		
		28, 60, 86-91	Therman 1953		
<i>hookeri</i>		30	„ „	H	S.W: China, Tibet
<i>kingianum</i>		64	„ „	—	Burma

DRYMOPHILA $x = 10$

<i>cyanocarpa</i>		20	W. D. Jackson unp.	—	Australia
-------------------	--	----	--------------------	---	-----------

DISPOROPSIS $x = 10$

<i>arisanensis</i>		40	Sato 1942	—	China
--------------------	--	----	-----------	---	-------

TRIBE X: COLCHICEAE

COLCHICUM $x = 7, 9, 10$. $x_1 = 17, 19$

<i>ritchii</i>	14	Feinbrun unp.	H	N. Afr., Palest.
<i>schimperi</i>	14	" "	H	Palest., Arabia
<i>hierosolym</i>	18	" "	H	Palestine
<i>bivonae</i>	36	Levan 1940a	H	Sicily, Sardinia
<i>fimbriatum</i>	36	Sato 1942	H	?
<i>sibthorpii</i>	36	" "	H	Greece
<i>luteum</i>	38	Mehra & K. 1948a	H	N. India—Turkes.
<i>autumnale</i>	38	Takenaka 1950	HM	Europe
<i>neapolitanum</i>	38	Levan 1940a	H	S. Italy, S. France
<i>speciosum</i>	38	" "	H	E. Medit., Cauc.
<i>byzantinum</i>	40	" "	H	<i>cult</i>
<i>giganteum</i>	40	" "	H	<i>cult</i>
<i>bornmülleri</i>	42	" "	H	Asia Minor
<i>variegatum</i>	44	" "	H	S. Europe
<i>latifolium</i>	54	" "	H	Greece, Crete
<i>montanum</i>	54	" "	H	S. Europe
<i>decaisnei</i>	54	Feinbrun unp.	H	E. Medit.
<i>steveni</i>	54	" "	H	Palest., Syria
<i>tunicatum</i>	54	" "	H	Palestine
<i>lusitanicum</i>	102	de Castro 1945b	—	Portugal

BULBOCODIUM $x = 11$

<i>vernum</i>	22	Levan & S. 1947	H	Europe
---------------	----	-----------------	---	--------

MERENDERA (COLCHICUM) $x = ?$

<i>bulbocodium</i>	60	Fernandes 1950b	H	Spain, Portugal
--------------------	----	-----------------	---	-----------------

TRIBES XI, XII, XIII: JOHNSONIEAE, MILLIGANIEAE, DIANELLEAE

LAXMANNIA (BARTLINGIA) $x = 8$

<i>sessiliflora</i>	16	W. D. Jackson unp.	—	Australia
---------------------	----	--------------------	---	-----------

ASTELIA $x = 8$

<i>velutina</i>	16	Sato 1942	—	?
<i>alpina</i>	c. 80	W. D. Jackson unp.	—	Australia

DIANELLA $x = 8$

<i>intermedia</i>	16	Hair 1942	H	New Zealand
<i>laevis</i>	16, 32	Curtis 1952	H	E. Australia
<i>coerulea</i>	16, 32, 48	" "	H	"
<i>revoluta</i>	16, 32, 48	" "	—	"
<i>tasmanica</i>	16, 64, 76, 80, 84	" "	H	Tasmania
<i>ensifolia</i>	32	Sato 1942	H	Asia, Austr., Haw.

STYPANDRA $x = 9$

<i>caespitosa</i>	18	W. D. Jackson unp.	H	Australia
-------------------	----	--------------------	---	-----------

TRIBE XIV: VERATREAE

SCHOENOCAULON $x = 8$

<i>officinale</i>	Cebadilla	16	de Zerpa 1951	M	Mexico
-------------------	-----------	----	---------------	---	--------

VERATRUM $x = 8$

<i>japonicum</i>		16	Sato 1942	—	Japan
<i>longebracteatum</i>		16	M. & S. 1935	—	"
<i>maximowiczii</i>		16	" "	—	"
<i>oxysepalum (album)</i>		32	" "	—	Eur., N. Asia
<i>stamineum</i>	32 + 2B	"	" "	—	Japan
<i>album</i>	White Hellebore	32	Stenar 1932	HM	Eur., N. Asia
<i>nigrum</i>	Black H.	64	Miller 1930	HM	Eur., Asia Min.

ZYGADENUS $x = 8, 11$

<i>fremonti</i>		22	Miller 1930	—	California
<i>chloranthus</i>		32	" "	H	N. America
<i>elegans</i>		32	" "	H	"

STENANTHIUM $x = 10$

<i>robustum</i>	Feather Fleece	20	Sato 1942	H	E. & C. U.S.A.
-----------------	----------------	----	-----------	---	----------------

TRIBE XV: ASPARAGEAE

ASPARAGUS $x = 10$

<i>crispus</i>		20	Nagao 1938	H	S. Africa
<i>lucidus</i>		20	" "	R	China, Japan
<i>medeoloides</i>	Smilax A.	20	" "	H	S. Africa
<i>myriocladus</i>		20	" "	H	Natal
<i>officinalis</i>	Asparagus	20	" "	MV	Eur., Siberia
<i>plumosus</i>	Fern A.	20	" "	H	S. Africa
<i>tenuifolius</i>		20	" "	H	S. Europe
<i>scandens</i>		20	Gardé & G. 1953	H	S. Africa
<i>umbellatus</i>		20	" " "	H	Canary Is.
sp.		40	Nagao 1938	—	
<i>splendens</i>		60	Sato 1942		
<i>sprengeri</i>		60	Nagao 1938	H	S. Africa

TRIBE XVI: BOWIEAE

BOWIEA $x = 10?$

<i>volubilis</i>	{ (18-23)	20	D'Amato 1949a	H	S. Africa
		21	Sato 1942		

TRIBE XVII: ANGUILLAREAE

DIPIDAX $x = 10$

<i>triquetrum</i>		20	Hair unp.	H	S. Africa
-------------------	--	----	-----------	---	-----------

ANGUILLARIA $x = 10$

<i>dioica</i>		20, 40	W. D. Jackson unp.	—	Australia
---------------	--	--------	--------------------	---	-----------

BAEOMETRA $x = 11$

<i>columellaris</i>		22	Miller 1930	H	S. Africa
---------------------	--	----	-------------	---	-----------

TRIBE XVIII: TRICYRTIDEAE

TRICYRTIS (BRACHYCYRTIS)* $x = 13$

<i>macropoda</i>	26	Sinoto & K. 1932	H	Japan, China	
<i>stolonifera</i>	Toad Lily & 2 spp.	26	Miller 1930	H	Formosa
<i>yatabeana</i>	& 6 spp.	26	Sato 1942	H	Japan, <i>cult</i>
<i>formosana</i>	25, 26, 52	" "	H	Formosa	

TRIBE XIX: NARTHECIEAE

JAPONOLIRION (TOLFIELDIA) $x = 12$

<i>osense</i>	24	Sato 1942	—	Japan
---------------	----	-----------	---	-------

NARTHECIUM $x = 13$

<i>ossifragum</i>	Bog Asphodel	26	Wulff 1935	H	W. Europe
-------------------	--------------	----	------------	---	-----------

ALETRIS $x = 13$

<i>foliata</i>	52	Sato 1942	—	E. Asia
----------------	----	-----------	---	---------

METANARTHECIUM $x = 13$

<i>luteo-viride</i>	52	Sato 1942	—	Japan
---------------------	----	-----------	---	-------

TOLFIELDIA $x = 14, 15$

<i>calyculata</i>	28	Miller 1930	H	Eur., N. Amer.
<i>pusilla (palustris)</i>	30	" "	—	N. Temp., Arctic
<i>nuda</i>	30	Sato 1942	—	Japan
<i>nutans</i>	30	M. & S. 1935	H	Japan, N. Amer., E. Siberia
<i>japonica</i>	60	" "	H	Japan

HELONIOPSIS $x = 17$

<i>breviscapa</i>	34	Ono 1926	H	Korea
<i>japonica</i>	34	Sato 1942	H	Japan
<i>orientalis</i>	34	Nakajima 1933	—	"
<i>pauciflora</i>	34	Sakai 1934	—	"

TRIBE XX: HELONIADAEAE

CHIONOGRAPHIS $x = 12$

<i>japonica</i>	24	Sato 1942	H	Japan
-----------------	----	-----------	---	-------

HELONIAS $x = 17$

<i>bullata</i>	Swamp Pink	34	Miller 1930	H	E: U.S.A.
----------------	------------	----	-------------	---	-----------

TRIBE XXI: OPHIOPOGONEAE

LIRIOPE $x = 18$

<i>graminifolia</i> v. <i>minor</i>	36	M. & S. 1935	H	Japan
v. <i>koreana</i>	108	Sato 1942		
<i>muscaria</i>	72	Westfall 1950	H	China, Japan
	{ 72, 108	Oinuma 1949		

OPHIPOGON (MONDO) $x = 18$

<i>jaburan</i>	Lily Turf	36	M. & S. 1935	H	Japan
<i>japonicus</i>		36, 72	Sato 1942	H	"
<i>planiscapus</i>		36, 72	Oinuma 1949	—	"

TRIBE XXII: PELIOSANTHEAE

PELIOSANTHES $x = 18$

<i>arisanensis</i>	36	Sato 1942	—	S.E: Asia
--------------------	----	-----------	---	-----------

TRIBE XXIII: ASPIDISTREAE

ASPIDISTRA $x = 18$

<i>lurida</i> (elattor)	{ 32, 36 36	{ K. 1931, T. 1937 Sato 1942	H	China
-------------------------	----------------	---------------------------------	---	-------

ROHDEA (RHODEA) $x = 19$

<i>japonica</i>	{ 36? 38 38	{ Yamamoto, K. 1931 M. & S. 1935 Sato 1942	H	Japan
-----------------	-------------------	--	---	-------

TRIBE XXIV: CONVALLARIEAE

CONVALLARIA $x = 19$

<i>majalis</i> Lily of the Valley	38	L. & L. 1944b	H	N. Temp.
<i>keiskii</i>	38	M. & S. 1935	H	Japan

REINECKIA $x = 19$

<i>carnea</i>	{ 38 42	{ Noguchi 1936 Hosono, K. 1931	H	China, Japan
---------------	------------	-----------------------------------	---	--------------

TRIBE XXV: HERRERIEAE

HERRERIA $x = 27$

<i>salsapilla</i>	54	Sato 1942	H	Brazil
-------------------	----	-----------	---	--------

294 TECOPHILAEACEAE

ODONTOSTOMUM $x = 10$

<i>hartwegii</i>	20	Cave 1949	—	California
------------------	----	-----------	---	------------

CYANASTRUM $x = 11, 12$

<i>cordifolium</i>	{ 22 24	{ Sato 1942 Nietsch 1941	—	Trop. Africa
--------------------	------------	-----------------------------	---	--------------

TECOPHILAEA $x = 12$

<i>cyano-crocus</i>	24	La Cour 1945 *	H	Chile
---------------------	----	----------------	---	-------

295 TRILLIACEAE

PARIS $x = 5$

<i>polyphylla</i>	10 + 0-1B	Darlington 1941	(G)H	Himalayas
<i>formosana</i>	10 + 2B	Gotoh & K. 1937	—	Formosa
<i>tetraphylla</i>	10	Darlington 1941	—	Japan
<i>hexaphylla</i>	10, 15	" "	—	"
<i>obovata</i>	10, 15	" "	—	"
<i>quadrifolia</i> Herb P.	20	" "	H	Europe
<i>japonica</i> (Kinagusa)	40	" "	—	Japan

TRILLIUM $x = 5$

<i>chloropetalum</i>	10	Warmke 1937	—	California
<i>declinatum</i> (gleasonii)	10 + 3B	Gotoh 1937	—	C: U.S.A.

TRILLIUM (cont.)

<i>decumbens</i>	10	Bailey 1951	—	N. America
<i>erythrocarpum (undulatum)</i>	10	La Cour 1951a	—	E: N. America
<i>grandiflorum</i>	10	Darlington & L.C. '40	H	" "
<i>kamtschaticum</i>	10	Haga 1937a	—	Japan, Kam.
<i>lanceifolium</i>	10	Bailey 1951	—	N. America
<i>luteum (sessile)</i>	10	La Cour 1951a	—	"
<i>ovatum</i>	10	Warmke 1937	—	W: N. America
<i>petiolatum</i>	10	" "	—	N.W: U.S.A.
<i>pulsillum</i>	10	Baldwin <i>et al.</i> 1949	H	E: N. America
<i>recurvatum</i>	10 + 0-2B	Gotoh 1937	—	C: U.S.A.
<i>rivale</i>	10	Warmke 1937	—	Oregon, Calif.
<i>sessile</i>	10	Darlington & L.C. '40	H	E: U.S.A.
<i>stamineum</i>	10	Bailey 1951	—	N. America
<i>stylosum</i>	10	Darlington & L.C. '40	H	S.E: U.S.A.
<i>undulatum</i>	10	Wilson & B. 1941	H	E: N. America
<i>erectum</i>	<div> <div>10</div> <div>10 + 0-4B</div> <div>15 + 2-3B</div> </div>	<div> <div>Darlington & L.C. '40</div> <div>Sparrow <i>et al.</i> 1952</div> <div>" "</div> </div>	<div> <div>H</div> <div></div> <div></div> </div>	E: N. America
<i>hagae</i>	15, 30	Haga 1951	—	Japan
<i>smallii (apetalon)</i>	20	" 1937a	—	"
<i>tschonoskii</i>	20	" 1937b	—	"
<i>amabile</i>	30	Amano 1944	—	"

MEDEOLA x = 7

<i>virginica</i>	Ind. Cucumber	14	Stewart & B. 1942	R	S.E.: U.S.A.
------------------	---------------	----	-------------------	---	--------------

SCOLIOPUS x = 7

<i>bigelovii</i>		14	Johansen 1932	—	N. America
------------------	--	----	---------------	---	------------

296 PONTEDERIACEAE

EICHHORNIA x = 8

<i>martiana</i>		16	Bowden 1945b	H	Brazil
<i>azurea</i>		32	" "	H	"
<i>crassipes</i>	Water Hyacinth	32	Taylor 1925c	H	Trop. America

PONTEDERIA x = 8

<i>cordata</i>	Pickrel Weed	16	Bowden 1945b	H	E: N. America
----------------	--------------	----	--------------	---	---------------

MONOCHORIA x = 14, 26

<i>hastaeifolia</i>		28	Majumdar 1953	(V)	Trop. Asia
<i>vaginalis</i>		52	Morinaga & F. '31a	(V)	Trop. Afr. & Asia

HETERANTHERA x = 15

<i>dubia</i>		30	Bowden 1945b	H	Trop. America
--------------	--	----	--------------	---	---------------

297 SMILACACEAE

SMILAX x = 13, 14, 15, 16

<i>herbacea</i>	Carrion Flower	26	Lindsay 1930	H	N. Amer., Japan
<i>glauca</i>	Cat Greenbrier	28	Jensen 1937a	HM	N. America
<i>aspera</i>		32	Carvalho 1948	H	S. Eur.—India

SMILAX (cont.)

<i>medica</i>	Mexican S.	32	Suzuka 1950a	M	Mexico
<i>oldhami</i>		32	Jensen 1937a	M	Japan
<i>rotundifolia</i>	Greenbriar	32	Speese 1939	HMR	N. Amer., W.I.
<i>sieboldii</i>		32	Nakajima 1933	M	Japan
<i>hederacea</i>		30	" 1937	M	"
<i>china</i>	China Root	60	" "	HMRT	Cochin-Ch.—Jap.

HETEROSMILAX $x = ?$

<i>japonica</i>		62	Sato 1942	—	Japan
-----------------	--	----	-----------	---	-------

298 RUSCACEAE

DANAE $x = 20$

<i>racemosa</i>	Alexandria	40	Sato 1942	H	Greece—Persia
<i>(laurus)</i>	Laurel				

RUSCUS $x = 20$

<i>aculeatus</i>	Butcher's Broom	40	Martinoli 1951	HT	Eur., S.W: Asia
<i>hypoglossum</i>		40	" "	H	S. Europe
<i>hypophyllum</i>		40	" "	H	Canary Is.—Cauc.

299 ALSTROEMERIACEAE

ALSTROEMERIA $x = 8$

<i>aurantiaca</i>		16	Whyte 1929	H	Chile
<i>brasiliensis</i>		16	" "	H	Brazil
<i>haemantha</i>		16	" "	H	Chile
<i>pulchella (psittacina)</i>		16	" "	H	S. America
<i>ligtu</i>		16	La Cour 1945 *	H	Chile
<i>rosea</i>		16	" "	H	"
<i>campaniflora</i>		16	" "	H	Brazil
<i>chilensis</i>		16	D. Sato 1938	H	Chile
<i>species aff. ligtu</i>		32	Goodspeed 1940	—	Andes

BOMAREA $x = 9$

<i>caldasiana</i>		18	Whyte 1929	H	Guatemala
<i>carderi</i>		18	" "	H	Peru, Colombia
<i>edulis</i>	W.I. Jer. Artichoke	18	" "	HR	Trop. America
<i>patacocensis</i>		18	" "	H	Andes, Guat.
<i>salsilla</i>		18	D. Sato 1938	R	Chile

302 ARACEAE

CALLA $x = 7, 9$

<i>palustris</i>	Water Dragon	{ 36, 72 63, 69, 70	Hagerup 1941b Ehrenberg 1945	R	N. Temp.
------------------	--------------	------------------------	---------------------------------	---	----------

AGLAONEMA $x = 8$

<i>pictum</i>		16	Gow 1908	H	Malaya
---------------	--	----	----------	---	--------

DIEFFENBACHIA $x = 8$

<i>picta</i>		16	Gow 1908	H	S. America
--------------	--	----	----------	---	------------

ACORUS $x = 9, 11, 12$

<i>calamus</i> Sweet Flag	{ 18 Dudley 1937, 18 D. 1951 24, 36, 48 Wulff 1954	HIMP	N. Temp.
<i>v. angustatus</i>	44 Kurakubo 1940		
<i>gramineus</i>	{ 18 D. 1951 22 Kurakubo 1940 24 Wulff 1940a 24 Ito 1942	HM	Himal.—Japan
<i>asiaticus</i>	44 „ „	—	N.E. Asia

AMBROSINIA $x = 11$

<i>bassii</i>	22 Vignoli 1939	H	Medit.
---------------	-----------------	---	--------

POTHOS $x = 12$

<i>scandens</i>	24 Snoad 1952	H	O.W. Tropics
-----------------	---------------	---	--------------

XANTHOSOMA $x = 12, 13$

<i>violaceum</i>	24 D. 1951	H	W. Indies
<i>sagittifolium</i> Coco Yam	26 E.K.J.*	R	Trop. America
<i>helleborifolium</i>	39 Simmonds 1954	—	Venez., Brazil

COLOCASIA $x = 12, 14$

<i>antiquorum</i> Taro Yam, (<i>esculenta</i>) Dasheen	{ 28 Ito 1942 36 Rao 1947b 48 D. 1951	R	India, <i>cult</i>
<i>v. nymphaefolia</i>	28 Sharma & D. 1954		
<i>v. gigantea</i>	{ 28 Kurakubo 1940 42 Nakajima 1936, 42 E.K.J.*		

MONSTERA $x = 12, 14$

<i>deliciosa</i> Ceriman	{ 24 E.K.J.* 56 D. 1951	FH	Mexico
<i>latevaginata</i>	56 „ „	H	Trop. America

ORONTIUM $x = 12, 14$

<i>aquaticum</i> Golden Club	{ 24 D. 1951 28 Huttleston unp.	FFoH	E: N. America
------------------------------	------------------------------------	------	---------------

TYPHONIUM $x = 13$

<i>trilobatum</i>	26 Simmonds 1954	H	India, Malaya
<i>divaricatum</i>	52 Ito 1942	H	Trop. Asia

AMORPHOPHALLUS $x = 13, 14$

<i>linumaana</i>	26 Kishimoto 1941	—	?
<i>satsumaensis</i>	26 „ „	—	?
<i>sylvaticus</i>	26 Asana & S. 1937	—	India
<i>titanum</i>	26 Tjio 1948	H	Sumatra
<i>rivieri (konjac)</i> Konjak	{ 26 Kishimoto 1941 26 Ito 1942 32 D. 1951	R	Cochinch.—Japan
<i>v. kiusiana</i>	{ 26 Ito 1942 39 Tjio 1948		Japan
<i>bulbifer</i>	36 Chandler 1943	H	India
<i>campanulatus</i>	{ 26 Asana & S. 1937 28 Patel & N. 1937	HR(V)	Trop. Asia

ARISAEMA* $x = 13, 14$

<i>ambiguum</i>	26	Bowden 1945a	—	China
<i>serratum</i>	{ 26	Nakajima 1933	H	Japan
	28!	Ito 1942		
<i>japonicum</i>	28	Kishimoto 1941	H	"
<i>murrayi</i>	28	Asana, T. 1936	—	Himalayas
<i>quinatum</i>	28	Bowden 1940a	R	S.E: U.S.A.
<i>ringens</i> & 13 spp.	28	Ito 1942	H	Japan
<i>tailhokensis</i>	28	Kishimoto 1941	—	Formosa
<i>thunbergii</i>	28	Nakajima '33, Ito '42	—	Japan
<i>sazenzoo</i>	28	Kurakubo 1940	—	Japan, China
<i>limbatum</i>	{ 28	Ito 1942	—	Japan
	32!	" "		
<i>concinnum</i>	56	Bowden 1940a	R	Himalayas
<i>dracontium</i> Dragon Root	{ 28, 56	Huttleston unpub.	H	E: U.S.A.
	56	Bowden 1940a		
<i>triphyllum</i> Indian Turnip	28, 56	Huttleston 1949	HR	E: N. America
<i>kiushianum</i>	56	Ito 1942	—	Japan
<i>ovale</i>	56	" "	—	"
<i>robustum</i>	56	" "	—	"
<i>sadoense</i>	56	" "	—	"
<i>heterophyllum</i>	c. 140	" "	—	"

PINELLIA $x = 13, 14$

<i>tripartita</i>	{ 26	Kurakubo 1940	H	S. Japan
	52	Ito 1942		
<i>ternata (tuberifera)</i>	{ 28	Huttleston unpub.		
	116	Ito 1942	H	Japan, China
	128	D. 1951		

ALOCASIA $x = 14$ (13?)

<i>cucullata</i>	28	Ito 1942	—	India
<i>fornicata</i>	28	Sharma & D. 1954	—	"
<i>macrorrhiza</i>	{ 26	M. & S. 1935,		
	28	Kurakubo 1940,	R	O.W. Tropics
	28	Ito 1942		

CRYPTOCORYNE $x = 14$

<i>ciliata</i>	28	Tjio 1948	H	India, Malaya
----------------	----	-----------	---	---------------

EMINIUM (HELICOPHYLLUM) $x = 14$

<i>crassipes</i>	28	Lotfy 1951	—	Palestine
------------------	----	------------	---	-----------

GONATANTHUS $x = 14$

<i>pumilus (sarmentosus)</i>	28	Sharma & D. 1954	H	Himalayas
------------------------------	----	------------------	---	-----------

PISTIA $x = 14$

<i>stratiotes</i> Water Lettuce	28	Blackburn 1933	MaM(V)	Tropics
---------------------------------	----	----------------	--------	---------

ARUM $x = 14, 16$

<i>maculatum</i>	{ 28	L. & L. 1942		Eur. (Sweden)
	56, 84	Maude 1940	(R)	(Britain)
	64	D. 1951		(France)
<i>italicum</i>	64	" "	R	Medit.

CALADIUM	$x = 15$	28 (30-32)	Sharma & D. 1954		
<i>bicolor</i>		30	Kurakubo 1940		
		30	Simmonds 1954	H	Trop. America
		48	Ito 1942		
SYMPLOCARPUS	$x = 15$				
<i>foetidus</i>	Skunk Cabbage	30	Ito 1942	H	E: N. Am., N.E. Asia
EPIPREMNUM	$x = 15$				
<i>mirabile</i>	Tonga Plant	60	Ito 1942	H	Mal.—Tr. Aust.
PHILODENDRON	$x = 15, 16, 17$				
<i>giganteum</i>		30	Simmonds 1954	H	Trop. America
<i>houlettianum</i>		32	D. 1951	—	Guiana
<i>andreaeanum</i>		34	M. & S. 1935	H	Colombia
ANTHURIUM*	$x = 15, 16, 22$				
<i>andraeanum</i>		30	Ito 1942	H	Colombia
<i>gracile</i>	& 30 spp.	30	Gaiser 1927	H	Guiana
<i>hookeri</i>		30	Kurakubo 1940	H	W.I., Br. Guiana
<i>schzerianum</i>		30	Ito 1942	H	Guatemala
		32	D. 1951		
<i>magnificum</i>		32	Haase-Bessel 1928	H	Colombia
<i>scandens</i>		c. 48	Gaiser 1927	H	Trop. America
<i>radicans</i>		c. 48	" "	H	Brazil
<i>calamus</i>		44	Kurakubo 1940	—	?
<i>crassinervium</i>		c. 60	Gaiser 1927	H	Panama, Venez.
<i>digitatum</i>		c. 60	" "	H	W. Indies, Venez.
<i>wallisii</i>		c. 60	" "	H	Colombia
CULCASIA	$x = 16$				
<i>scandens</i>		32	D. 1951	H	Trop. Africa
DRACUNCULUS	$x = 16$				
<i>vulgaris</i>		32	D. 1951	HM	S. Europe
SAUROMATUM	$x = 16$				
<i>guttatum</i>		32	D. 1951	H	N.W. India
ZAMIOCULCAS	$x = 16$				
<i>zamiifolia</i>		32	D. 1951	H	E: Trop. Africa
ZANTEDESCHIA	$x = 16$				
<i>aethiopica</i>	Arum Lily	32	Ito 1942	HMV	S. Africa
SCINDAPSUS	$x = ?$				
<i>pictus</i>	Silver Vine	112	D. 1951	H	Malaya, Java
ARIOPSIS	$x = 20?$				
<i>peltata</i>		80	D. 1591	H	Himalayas
PELTANDRA	$x = 22$				
<i>undulata</i>		c. 44	Duggar 1900	H	E: U.S.A.
<i>virginica</i>	Green Arrow Arum	88	Huttleston unp.	H	N.E. America

303 LEMNACEAE

LEMNA (SPIRODELA) $x = 10, 11$

<i>minor</i>	Duckweed	40	Blackburn 1933	H	Cosmop.
<i>polyrrhiza</i>		40	" "	—	"
<i>trisulca</i>		44	" "	—	Eur., Siberia
<i>gibba</i>		64	" "	—	N. Hemisphere

WOLFFIA $x = ?$

<i>arrhiza</i>		{ c. 44-46	Lawalrée 1943	—	Temp.
		c. 50	Blackburn 1933	—	

304 SPARGANIACEAE

SPARGANIUM* $x = 15$

<i>angustifolium</i>		30	L. & L. 1942	—	N. Amer., Austr.
<i>friesii</i>		30	" "	—	Europe
<i>hyperboreum</i>		30	" 1948	—	N. Europe
<i>minimum</i>	Bur Weed	30	Wulff 1938	—	Europe
<i>ramosum</i>	Bede Sedge	30	" "	T	"
<i>simplex</i>		30	Hagerup 1941b	—	"
<i>yamatense</i>	& 4 spp.	30	Harada 1947	—	Japan
<i>stenophyllum</i>		30, 45	" "	—	Manchuria

305 TYPHACEAE

TYPHA $x = 15$

<i>angustata</i>		30	Harada 1947	—	E. Medit., S.W: Asia
<i>angustifolia</i>	Sm. Reed Mace	30	L. & L. 1942	HT	Am., Eur., Asia
<i>latifolia</i>	Cat-tail	30	Harada 1947	HT	N. Am., Eur., As.
<i>orientalis</i>		30	" "	H	China, Japan

306 AMARYLLIDACEAE

HABRANTHUS $x = 6$

<i>robustus</i>		{ 12	D. Sato 1938,	H	Uruguay
		12	Flory 1948		
<i>andersoni</i>		{ 21	D. Sato 1938	H	Argentina
		24	Flory 1948		
<i>as texana</i>		24	" "	H	(Texas)
<i>brachyandrus</i>		24	" "	H	S. Brazil

ZEPHYRANTHES $x = 6, 7$ $x_3 = 19$

<i>tauberti</i>		12	D. Sato 1938	H	S. America
<i>atamasco</i>	Atamasco L.	24	Flory 1943	H	S.E: U.S.A.
<i>treatiae</i>		24	" "	H	"
<i>verecunda</i>		24	La Cour 1952	H	Mexico
<i>tubispatha</i>		25!	Flory 1943	H	W. Indies
<i>flammea</i>		14	Schnack & C. 1947	—	Peru
<i>candida</i>		38	Inariyama 1937	H	Argentina
<i>macrosiphon</i>		46, 48	Flory 1943	H	Mexico

ZEPHYRANTHES (cont.)

<i>grandiflora</i> (carinata)	48	Coe 1954	H	C. Amer., W.I.
<i>pulchella</i>	48	Flory 1943	H	Texas
<i>simpsonii</i>	48	" "	H	Florida
<i>lindleyana</i>	c. 96	La Cour unpub.	H	Mexico
<i>ajax</i>	42	Sato 1942	H	cult
<i>brazosensis</i>	48, 55-59	Coe 1954	—	S: U.S.A.
<i>longifolia</i>	(24) 44-50	" "	H	S: U.S.A., Mex.

LYCORIS x = 6, 9, 11 (by fusion from 11)

<i>sanguinea</i>	22	Inariyama 1937	H	Japan
<i>sprengeri</i>	22	" 1944	H	"
<i>radiata</i> v. <i>pumila</i>	22	" "	H	China
<i>radiata</i> (3x)	33	" "	H	"
v. <i>alba</i>	39	D. Sato 1938	H	"
<i>albiflora</i>	17	Inariyama 1937	H	cult
<i>straminea</i>	16	" "	H	China
<i>aurea</i>	12, 13, 14	" "	H	China, Japan
<i>squamigera</i> (3x)	27	" "	H	Japan

COOPERIA x = 12

<i>traubii</i>	24	Coe 1954	H	Texas
<i>drummondii</i>	(24), 48	" "	H	Texas, Mexico
<i>pedunculata</i>	48	Sato 1942, Coe 1953	H	" "
<i>brasiliensis</i>	69 + B	Traub 1945	—	Brazil

GALANTHUS c = 12

<i>byzantinus</i>	24	La Cour 1946	H	S.E: Europe
<i>cilicicus</i>	24	" "	H	Taurus
<i>platyphyllus</i> (latifolius)	24	" "	H	Cauc., Asia M.
<i>plicatus</i>	24	Sato 1942	H	Crimea
<i>nivalis</i> Snowdrop	{ 24, 25, 28	" "	H	Europe, Cauc.
	24, 36	La Cour 1946		
<i>elwesii</i>	24, 48	Sato 1938	H	Asia Minor

IXIOLIRION x = 12

<i>montanum</i> (tataricum)	24	Traub 1942	H	W. Asia, Siberia
-----------------------------	----	------------	---	------------------

LEPTOCHITON x = 12

<i>quitoensis</i>	24	Snoad 1952	H	Ecuador
-------------------	----	------------	---	---------

UNGERNIA x = 12

<i>sewerzowii</i>	24	Baranov & P. 1925	—	Persia
-------------------	----	-------------------	---	--------

LEUCOJUM x = 7, 8, 9, 11

<i>autumnale</i>	14	Neves 1939	H	Medit.
<i>trichophyllum</i>	14	" "	H	W. Medit.
<i>roseum</i>	16	" "	H	Corsica
<i>hiemale</i>	18	" "	H	Riviera
<i>aestivum</i>	22	" "	H	Eur., S.W: Asia
v. <i>pulchellum</i>	22	" "	H	Balearics
<i>vernum</i> Snowflake	22	" "	H	Europe

NARCISSUS $x = 7, 10, 11$

(i) $x = 7$

<i>asturiensis</i>	14 + 0-2B	Wylie 1952	H	C. & N. Sp. & Portugal
<i>atlanticus</i>	14	" "	(H)	Atlas
<i>bulbocodium</i>	14, 21, 28, 35, 42	Fernandes 1934	H	Sp., Port., S.W.
Hoop Petticoat	14 + 0-4B	" 1949a		France, N.W.
<i>v. citrinus</i>	14 + 0-2B	Wylie 1952		Africa
<i>genuinus</i>	14	Fernandes 1934		
<i>nivalis</i>	14	" "		
<i>obesus</i>	26!	" & N. '41		
<i>conspicuus</i>	28	" "		
<i>monophyllus foliosus</i>	28	" 1951 "		
<i>romieuxii</i>	29!	Wylie 1952		Morocco
<i>calvicola</i>	14 + 0-2B	" "	H	Portugal
<i>cyclamineus</i>	14 + 0-1B	" "	H	N. Portugal
<i>fernandesii</i>	14	Fernandes 1951	—	Portugal
<i>gaditanus</i>	14	" 1939b	—	S.W: Sp. & Port.
<i>jonquilla</i> Jonquil	14	Nagao 1933	H	S. Sp. & Port.
<i>juncifolius</i>	14 + 1B	Fernandes 1939c	H	Spain, S. France
<i>minor</i>	14	" & F. '46	H	Pyrenees
<i>v. pumilus</i>	14	" "		
	14 + 1B	Wylie 1952		
<i>minutiflorus</i>	14	Fernandes 1939b	—	S.W: Sp. & Port.
<i>poeticus</i> Pheasant's Eye	14, 21	Nagao 1929	H	S. Europe
<i>v. radiiflorus</i>	14	Wylie 1952		E. Adriatic
<i>recurvus</i>	21	" "		<i>cult</i>
<i>pseudonarcissus</i> Daffodil	14	Fernandes & F. '46	H	W. Europe
<i>v. pallidiflorus</i>	15	Philp 1934b		
<i>hispanicus (maximus)</i>	21	" "		<i>cult</i>
<i>tortuosus</i>	21	Fernandes & F. '46		"
<i>bicolor</i>	28	" " "		"
<i>nobilis</i>	28	" 1951		"
<i>rupicola</i>	14	" 1939b	H	Spain, Portugal
<i>scaberulus</i>	14	" "		Portugal
<i>triandrus</i>	14	" 1949b	H	Sp., Port., Britt.
<i>viridiflorus</i>	28	" 1943	(H)	Gib., N.W. Afr.
<i>watieri</i>	14	" 1939b	H	Morocco

(ii) $x = 10, 11$

<i>broussonetii</i>	22	Fernandes 1940	—	Morocco
<i>elegans</i>	20	" 1943	—	W. Medit.
<i>serotinus</i>	30	" "	—	Medit.
<i>tazetta</i> Polyanthus N.	22	" 1937b	H	"
	20-22, 30-32	Nagao 1933		Japan, <i>cult</i>
<i>v. italicus</i>	22	Maugini 1952		S. France, Cors., Italy
<i>v. aureus</i>	22	" 1953c		Medit.
<i>bertolonii</i>	20, 22	" "		Italy
<i>patulus</i>	20, 22	" "		Italy, Greece
<i>cypri</i>	30, 33	" "		E. Medit.

(iii) **HYBRID SPECIES**

<i>bernardi (ps. nar. x poet.)</i>	14 + 1B	Wylie 1952	H	Pyrenees
<i>gracilis (jon. x poet.)</i>	14	Pereira 1940	H	<i>cult</i>
<i>odorus (ps. nar. x jon.)</i>	14	Fernandes 1934	H	"
<i>tenuior (jon. x poet.)</i>	14	Pereira 1940	H	"
<i>johnstonii (ps. nar. x triandrus)</i>	21	Wylie 1952	H	Portugal

NARCISSUS (cont.)				
<i>jonquilloides (jon. x gad.)</i>	21	Fernandes 1939a	—	S.W. Iber. Penin.
<i>intermedius (jon. x taz.)</i>	17	Nagao 1933	H	N.E. Spain (?)
<i>biflorus (poet. x taz.)</i>	17	Fernandes 1934	H	S. France (?)
	24	Nagao 1933		
<i>dubius (junc. x taz.)</i>	50	Fernandes 1937a	H	S. Fr., N.E. Sp.
TAPEINANTHUS $x = (7) 14$				
<i>humilis</i>	28	Fernandes & F. '45	—	S.E. Spain, Mor.
CRYPTOSTEPHANUS $x = (7) 14$				
<i>vansonii</i>	28	Gouws 1949	—	S. Africa
ANOIGANTHUS $x = 8$				
<i>breviflorus</i>	16	Gouws 1949	H	S. Africa
VALLOTA $x = 8$				
<i>speciosa (purpurea)</i>	16	Sato 1942	H	S. Africa
HAEMANTHUS $x = 8, 9$				
<i>albiflos</i>	16	Sato 1938	H	S. Africa
	16 + 2B	" "	H	<i>cult</i>
<i>coccineus</i>	16	" "	H	S. Africa
<i>hirsutus</i>	16	Gouws 1949	—	"
<i>nelsonii</i>	16	" "	H	Transvaal
<i>katherinae</i>	18	Snoad 1952	H	Natal
<i>magnificus</i>	18	Gouws 1949	H	"
<i>multiflorus</i>	18	Snoad 1952	H	Trop. Africa
CYRTANTHUS $x = 8, 11$				
<i>parviflorus</i>	16	Taylor 1925a	H	S. Africa
<i>tuckii</i>	16	Gouws 1949	H	"
<i>obliquus</i>	22	D. Sato 1938	H	Cape Prov.
HIPPEASTRUM $x = 9, 11$				
<i>advenum</i>	18	Ficker 1951	H	Chile
<i>chilense</i>	18	" "	H	"
<i>pratense</i>	18	Sato 1942	H	"
<i>aulicum</i>	22	Snoad 1952	H	Brazil, Paraguay
<i>calyptratum</i>	22	Neto 1948	H	Brazil
<i>equestre</i>	22	Snoad 1952	H	Trop. America
<i>solandriflorum</i>	22	Baldwin & S. 1947a	H	Trop. S. Amer.
<i>stylosum</i>	22	Neto 1948	H	Brazil, Guiana
<i>rutilum</i> v. <i>fulgidum</i>	22	Snoad 1952	H	Brazil, Ven.
	44	Sato 1942		
<i>candidum</i>	33	Snoad 1952	H	Argentina
<i>reginae</i>	33	Neto 1948	H	Brazil
<i>ruiri</i>	33	Snoad 1952	H	<i>cult</i>
<i>vittatum</i>	43	" unp.	H	Peru
	44	Inariyama 1937		
<i>hybridum</i>	44	Inariyama 1937	H	<i>cult</i>
<i>blumenavia (as Griffinia)</i>	77	Sato 1938	H	Brazil

MIERSIA $x = 10$ (11)					
<i>chilensis</i>	20, 21	Cave & B. 1943	H	Chile	
AMARYLLIS $x = 11$					
<i>belladonna</i> Cape Plant	22	Sato 1938,	H	S. Africa	
(<i>Brunsvigia rosea</i>)	22	Gouws 1949			
AMMOCHARIS $x = 11$					
<i>coranica</i>	22	Gouws 1949	—	S. Africa	
BOÖPHONE $x = 11$					
<i>disticha</i>	22	Gouws 1949	H	S. Africa	
<i>guttata</i>	22	„ „	—	„	
BRUNSVIGIA $x = 11$					
<i>cooperi</i>	22	Gouws 1949	—	S. Africa	
CLIVIA $x = 11$					
<i>caulescens</i>	22	Gouws 1949	—	S. Africa	
<i>miniata</i>	22	Inariyama 1937	H	Natal	
<i>nobilis</i>	22	„ „	H	S. Africa	
<i>cyrtanthiflora</i>	18?	Wittlake 1940	H	<i>cult</i>	
(<i>miniata</i> \times <i>nobilis</i>)					
CRINUM $x = 11$					
<i>abyssinicum</i>	22	Dolcher 1950	H	Abyssinia	
<i>asiaticum</i>	22	Inariyama 1937	H	Trop. Asia	
<i>buphanoides</i>	22	Gouws 1949	—	S. Africa	
<i>crispum</i>	22	„ „	H	Transvaal	
<i>forbesianum</i>	22	„ „	H	Delagoa Bay	
<i>gigas</i>	22	Inariyama 1937	H	Bonin Is.	
<i>latifolium</i>	22	„ „	H	India	
<i>lineare</i>	22	D. Sato 1938	H	S. Africa	
<i>longifolium (capense)</i>	{ 22 + 2B	22 Dolcher 1950	H	„	
		2B Inariyama 1937	H	„	
<i>moorei</i>	22	D. Sato 1938	H	„	
<i>grandiflorum</i>	22	Sato 1942	H	<i>cult</i>	
<i>octobris</i>	22	„ „	H	„	
<i>powellii</i>	22	Dolcher 1950	H	„	
<i>rattrayi</i>	22	D. Sato 1938	H	Trop. Africa	
<i>yemensae</i>	22	Snoad 1952	H	Arabia	
<i>macrantherum</i> (3x)	33	D. Sato 1938	—	Melanesia	
<i>bulbispermum</i>	72	Gouws 1949	H	S. Africa	
CYBISTETES $x = 11$					
<i>longifolia</i>	22	Gouws 1949	H	S. Africa	
LAPEIDRA $x = 11$					
<i>martinezii</i>	22	Fernandes 1950a	—	S.E: Spain	
PANCRATIUM $x = 11$					
<i>maritimum</i>	22	Fernandes 1933	H	Medit.	
<i>illyricum</i>	{ 22	22 Brumfield 1941	H	S. Europe	
		44 Sato 1938	H		

STERNBERGIA $x = 11, 12?$

<i>lutea</i>	{ 22, 33	Inariyama 1937		
	24	Battaglia 1949b	H	Medit.
		Amico 1947		

NERINE $x = 11, 12$

<i>angustifolia</i>	22	Janaki Ammal 1951b	H	S. Africa
<i>appendiculata</i>	22	" " "	H	Natal
<i>duparquetiana</i>	22	Gouws 1949	—	S. Africa
<i>falcata</i>	22	" " "	—	"
<i>frithii</i>	22	" " "	—	"
<i>laticoma</i>	22	" " "	—	"
<i>lucida</i>	22	Janaki Ammal 1951b	—	"
<i>marginata</i>	22	" " "	—	"
<i>bowdenii</i>	22, 24	" " "	H	Cape Pen.
<i>filifolia</i>	22, 24	" " "	H	S. Africa
<i>masanorum</i>	{ 22, 24	" " "	—	Kalahari
		Gouws 1949		
<i>curvifolia</i>	22, 24, 33	Janaki Ammal 1951b	H	Cape Pen.
<i>sarniensis</i> Guernsey Lily	22, 24, 33	" " "	H	"
<i>flexuosa</i>	22, 33	" " "	H	Transvaal
<i>humilis</i>	22, 33	" " "	H	Table Mt.
<i>pudica</i>	22, 33	" " "	H	<i>cult</i>
<i>undulata</i>	22, 33	" " "	H	S. Africa
<i>moorei</i>	33	" " "	H	Cape Prov.

Garden forms 22-26, 28, 33, 36 Janaki Ammal & B. H *cult*
44 1951

HEMEROCALLIS* $x = 11$

<i>flava</i> Common Day Lily & 3 spp.	22	Dark 1932b	H	Eur., T. Asia
<i>koreana</i>	22	Takenaka 1952	—	Korea
<i>forrestii</i> & 7 spp.	22	Stout 1932	H	China
<i>fulva</i>			H	Eur., T. Asia
<i>v. longituba</i>	22	Sato 1942		
<i>v. Kwanso</i>	33	" " "		
	36?	Suzuka 1950a		
<i>as disticha</i>	22, 33	Takenaka 1952		

HEPEROCALLIS $x = 12$

<i>undulata</i>	48	Cave 1948b	H	Colo., Ariz.
-----------------	----	------------	---	--------------

LEUCOCRINUM $x = 14$

<i>montanum</i>	28	Cave 1948b	H	W: U.S.A.
-----------------	----	------------	---	-----------

ELISAENA $x = 23$

<i>longipetala</i>	46	Snoad 1952	H	Peru
--------------------	----	------------	---	------

HYMENOCALLIS $x = 23$

<i>amancaes</i>	46	Snoad 1955	H	Chile, Peru
<i>littoralis</i>	46	D. Sato 1938	H	S. America
<i>speciosa</i> Spider Lily	{ 46, 90-100	Sato 1938	H	W. Indies
		Heitz 1926		
<i>lacera</i>	69	D. Sato 1938	H	N. America
<i>macrostephana</i>	46, 92	Snoad 1955	H	S. America
<i>senegambica</i>	69	" " "	H	Guinea
<i>calathinum</i>	86-231	" 1955	H	S. America

PAMIANTHE $x = 23$				
<i>peruviana</i>	46	La Cour unp.	H	Peru
PHAEDRANASSA $x = 23$				
<i>carmioli</i>	46	Snoad 1952	H	Costa Rica
EUCHARIS $x = ?$				
<i>grandiflora</i> Amazon L.	68	Sato 1938	H	Colombia
SPREKELIA $x = ?$				
<i>formosissima</i>	{ c. 117	Sato 1938	H	Mexico
	{ c. 121	Snoad unp.		

307 IRIDACEAE

CROCUS $x = 3, 4, 5, 6, 7$, etc.

$x = 3, 4$

<i>balansae</i>	6	Mather 1932	H	S.W. Asia
<i>candidus</i> v. <i>subflavus</i>	6	Karasawa 1943	H	Asia Minor
<i>graveolens</i>	6	Mather 1932	H	"
<i>hyemalis</i>	6 + 4B	" "	H	Syria, Palestine
<i>olivieri</i>	6	" "	H	S.E. Europe
<i>suterianus</i> (<i>aucheri</i>)	6	" "	H	Asia Minor
<i>biflorus</i> Cloth-of-Silver	7, 8, 15, 20	Karasawa 1943	H	Eur., Asia Min.
<i>flavus</i> (<i>aureus</i>)	8	Mather 1932	H	S.E. Eur., As. M.
<i>danfordiae</i>	8	" "	H	Asia Minor
<i>kotschyanus</i> (<i>zonatus</i>)	8	" "	H	"
<i>aerius</i>	8, 14	" "	H	"
<i>chrysanthus</i>	8, 9, 10	" "	H	Greece, Asia M.
<i>etruscus</i>	{ 8	Karasawa 1943	H	Italy
	{ 11	Mather 1932		
<i>stellaris</i>	8, 11	" "	H	<i>cult</i>
<i>vernus</i>	8, 16-32	Karasawa 1943	H	Eur., <i>cult</i>

$x = 5-8$

<i>hueffelianus</i>	{ 9!	Karasawa 1943	H	Hungary
	{ 14	Mather 1932		
<i>ancyrensis</i>	10	Karasawa 1950	H	Asia Minor
<i>ochroleucus</i>	10	Mather 1932	H	Syria, Palestine
<i>reticulatus</i>	10	" "	H	Caucasus—Italy
<i>cancellatus</i>	10, 16	Karasawa 1943	HV	Greece—Persia
<i>pulchellus</i>	12	Mather 1932	H	Greece, Asia M.
<i>angustifolius</i> Cloth-of-Gold	12	Karasawa 1950	H	Crimea, Cauc.
(<i>susianus</i>) C.				
<i>speciosus</i>	{ 12, 14, 16	" 1940	H	Asia M., S. Russ.,
	{ 12, 18	Mather 1932		Persia
<i>sativus</i> Saffron	{ 14, 15	" "	HMSp	Italy—Kurdistan
	{ 16, 40	Karasawa 1940		<i>cult</i>
	{ 24	Sugiura 1931		
<i>sieheanus</i>	16	Karasawa 1943	H	Asia Minor
<i>tomasinianus</i>	16	Mather 1932	H	Dalmatia
<i>hadriaticus</i>	{ 16	" "	H	Greece, Albania
	{ 24	Karasawa 1943		
$x = 10-15$				
<i>felscheri</i>	20	Mather 1932	H	Asia Minor
<i>karduchorum</i>	20	" "	—	Kurdistan

CROCUS (cont.)

<i>korolkowii</i>	20	Mather 1932	H	Turkestan
<i>leichtlinii</i>	20	" "	H	Asia Minor
<i>asturicus</i>	22	" "	H	Spain
<i>corsicus</i>	22	" "	H	Corsica
<i>dalmaticus</i>	22	Karasawa 1943	H	Dalmatia
<i>medicus</i>	22	" "	H	Riviera
<i>sieberi</i>	22	Mather 1932	H	Greece
<i>boryi</i> v. <i>marathonisus</i>	24	" "	H	"
<i>malyi</i>	24	" "	H	Dalmatia
<i>minimus</i>	24	Karasawa 1943	H	Cors., Sardinia
<i>salzmännii</i>	24	Mather 1932	H	Spain, Morocco
<i>byzantinus</i> (<i>iridiflorus</i>)	26	" "	H	E. Europe
<i>imperati</i>	26	" "	H	Italy
<i>laevigatus</i> v. <i>fontenayi</i>	26	" "	H	Greece
<i>niveus</i>	26	Karasawa 1932	H	"
<i>versicolor</i>	26	Mather 1932	H	Eur. Alps
<i>longiflorus</i> (<i>odorus</i>)	28	Karasawa 1943	H	S. Italy, Sicily
<i>pestalozzae</i>	28	" "	H	Greece, Turkey
<i>tournefortii</i>	30	Mather 1932	H	Greece
<i>nudiflorus</i>	c. 46	" "	H	S.W. Europe

CYPELLA $x = 5, 7$

<i>purgans</i>	10	Sakai 1952	—	Brazil
<i>herbertii</i>	14	" "	H	Argentina
	{ 14 + 0-1B	Covas & S. 1947		

BABIANA $x = 6? 7?$

<i>stricta</i>	{ 12	Brittingham 1934	H	S Africa
	14	Sugiura 1931		

NEOMARICA (MARICA) $x = 7$

<i>northiana</i>	14	M. & S. 1935	H	Brazil
------------------	----	--------------	---	--------

SPARAXIS $x = 7?, 10?$

<i>tricolor</i>	{ 14	Sugiura 1931	H	S. Africa
	20	Nakajima 1936		

IRIS* $x = 7 \ 8 \ 9, 10, 12$, etc.

(i) BULBOUS GROUP

S. 1. XIPHIUM $x = 7, 8, 9. \ x_2 = 15, 17, 25$

<i>tingitana</i>	{ 28	Simonet 1934a	H	Morocco
	42	" "	H	cult
<i>xiphioides</i>	42	" "	H	Pyrenees
<i>filifolia</i>	32	" 1952	H	S. Spain, N. Afr.
<i>junceae</i>	{ 32	" 1934a	H	Sicily, N. Africa
as <i>lusitanica</i>	34	" "		
<i>xiphium</i>	{ 34	" "	H	W. Medit.
v. <i>battandieri</i>	36	" "	H	N. Africa
<i>boissieri</i>	36	" 1952	H	Portugal
sp. 119	30	" "	—	Tangiers
sp. 117	50	" "	—	"

S. 2. RETICULATA $x = 8, 10, 14$

<i>histrioides</i>	16, 17	Simonet 1934a	H	Asia Minor
<i>wlnogradowii</i>	16	" "	H	Caucasus

IRIS (cont.)

<i>bakeriana</i>	20	Simonet 1952	H	Asia M., Mesop.
<i>histrlo</i>	20	" 1934a	H	Asia Minor
<i>vartanii</i>	20	" "	H	Palestine
<i>reticulata</i>	20	" "	H	Caucasus
<i>danfordiae</i>	28	" "	H	Asia Minor

S. 3. JUNO $x = 9, 11, 12, 13, x_2 = 25$

<i>caucasica</i>	18	Simonet 1934a	H	Cauc., Asia Min., Persia
<i>willmottiana</i> v. <i>alba</i>	21	" 1952	H	Tashkent
<i>bucharica</i>	22	" 1934a	H	Bokhara
<i>orchoides</i>	22	" "	H	"
<i>sindjarensis</i>	22	" "	H	Mesopotamia
<i>alata</i>	24	" "	H	W. Medit.
<i>warleyensis</i>	24	" "	H	Bokhara
<i>persica</i>	26	" "	H	Asia M.—Persia
<i>vicaria</i>	26	" 1952	H	C. Asia
<i>graeberiana</i>	50	" "	H	Turkestan

S. 4. NEPALENSIS $x = 12, 14$

<i>decora</i> (<i>nepalensis</i>)	24	La Cour unpub.	H	N.W. Him.—Yun.
<i>collettii</i>	28	Simonet 1934a	H	Burma—Yunnan

(ii) RHIZOMATOUS GROUP

S. 5. APOGON $x = 7, 8, 10, 11, 12$, etc.

$x = 7$

<i>orientalis</i>	28	Simonet 1934a	H	Manch., Kor., Jap.
<i>sibirica</i>	28	" "	H	Eur., W. Russia
<i>tenuis</i>	28	" "	H	Oregon
<i>fulva</i>	42	" "	H	S.E. U.S.A.
<i>prismatica</i>	42	" "	H	E. N. America
<i>verna</i>	42	" "	H	S. U.S.A.

$x = 8$

<i>sintenesii</i>	16, 32	Simonet 1934a	H	Italy—Asia M.
<i>rossii</i>	32	Kurita 1940	H	Korea, China

$x = 9$

<i>kerneriana</i>	18	La Cour unpub.	H	Asia Minor
<i>humilis</i>	72	Simonet 1934a	H	Trans., Cauc., Alt.

$x = 10$

<i>urumovii</i>	20	" "	H	Europe
<i>aurea</i>	40	" "	H	Kashmir
<i>bracteata</i>	40	Foster 1937	H	Oregon
<i>bulleyana</i>	40	Simonet 1934a	H	W. China
<i>chrysographes</i>	40	" "	H	"
<i>delavayi</i>	40	" "	H	"
<i>douglasiana</i> (<i>watsoniana</i>)	40	" "	H	California
<i>foetidissima</i>	40	" "	HM	Eur., N. Africa
<i>forrestii</i>	40	" "	H	W. China
<i>gormanii</i>	40	" "	H	Oregon
<i>hartwegii</i> v. <i>australis</i>	40	Lenz 1950	H	S. California
<i>innominata</i>	40	" unpub.	H	Oregon
<i>munzii</i>	40	" 1950	—	California
<i>ochroleuca</i>	40	Simonet 1934a	H	W. Asia Minor
<i>pabularia</i> (<i>ensata</i>)	40	" "	H	C. Asia—Korea
<i>purdyi</i>	40	Foster 1937	H	Ore., N. Calif.

IRIS (cont.)

<i>tenax</i>	40	Simonet 1934a	H	Wash., Oregon
<i>wilsoni</i>	40	" "	H	W. China
x = 11				
<i>minuta</i>	22	Simonet 1934a	H	Japan
<i>spuria</i>	22	Westergaard 1938	H	Europe
<i>chrysophaeanicia</i>	43	Randolph 1934	H	S.E: U.S.A.
<i>brevicaulis (foliosa)</i>	44	Simonet 1934a	H	"
<i>carthaliniiae</i>	44	" "	H	Caucasus
<i>halophila</i>	44	" "	H	C. Asia
<i>hexagona</i>	44	Snoad 1952	H	S.E: U.S.A.
<i>lilacina</i>	44	La Cour unp.	H	Persia?
<i>missouriensis</i>	88	Snoad 1952	H	S.E: U.S.A.
x = 12, 13, 15, 16, 17, 19				
<i>aschersoni</i>	24	Simonet 1952	H	Cilicia
<i>grant-duffii</i>	24	" 1934a	H	Palestine
<i>kaempferi</i>	24	" "	H	Manch.—Japan
<i>melanostica</i>	24	" 1952	H	Jordan
<i>pseudacorus</i> Yellow F.	{ 24, 30, 34	L. & L. 1942	(B)P	Eur., Cauc., Sib.
	{ 32, 34	Ehrenberg 1945		
<i>laevigata</i> Blue Flag	32	Kazao 1929	HM	E. & N. Asia
<i>unguicularis (stylosa)</i>	38	Simonet 1934a	H	E. Medit., Algeria
<i>v. lazica</i>	32	" 1952	H	E. Asia Minor
<i>v. speciosa</i>	{ 36	La Cour 1952	H	E. Medit.
	{ 38	Simonet 1952		
<i>v. alba</i>	48	La Cour 1952	H	"
<i>graminea</i>	34	Simonet 1934a	H	S. Eur., Cauc.
<i>maritima</i>	38	" "	H	W. Eur., N. Afr.
<i>setosa</i>	38	" "	HR	N. Asia, Alaska, Lab., E: U.S.A.
<i>virginica</i>	54, 56, 70	Anderson 1936	H	E: N. America
<i>ruthenica</i>	c. 84	Simonet 1934a	H	Transylv.—Korea
<i>longipetala</i>	c. 86	" "	H	California
<i>montana</i>	c. 86	" "	H	W: U.S.A.
<i>versicolor</i> Blue Flag	72, 84, 105	" "	HM	E: N. America
S. 6. POGONIRIS x = 8, 10, 11, 12, 13				
x = 8				
<i>attica</i>	16	Simonet 1934a	H	Greece, Cauc.
<i>pseudopumila</i>	16	" 1952	H	S. Italy, Sicily
<i>mellita</i>	24	" 1934a	H	Greece, Turkey
<i>reichenbachii</i>	{ 24, 32	" "	H	Balkans
	{ 40	Randolph 1935		
<i>as balkana</i>	24, 48	Simonet 1934a		
<i>pumila</i>	32, 36	" "	H	E. Europe
x = 10 (Dwarf Bearded Irises)				
<i>chamaeiris (olbiensis)</i>	40	Simonet 1934a	H	S. Europe
<i>subbiflora (biflora)</i>	40	" "	H	Port., Sp., N. Afr.
x = 11 (or 10 + 12)				
<i>flavissima</i>	22	Simonet 1934a	H	Hungary—Mong.
<i>albicans</i>	44	" "	H	S. Eur., Asia M., Yemen
<i>billottii</i>	44	" 1952	H	N.E. Asia Min.
<i>kashmiriana</i>	44	" 1934a	H	Himalayas
<i>kochii</i>	44	" "	H	<i>cult</i>
<i>germanica</i> Orris Root	44	" "	HP	Europe, <i>cult</i>

IRIS (cont.)

germanica

	24	Simonet 1934a		
as florentina	28	Sakai 1952		
	48	Kazao 1929		
as amas (macrantha)	48	Simonet 1934a		

x = 12 (Tall Bearded Irises)

alberti	24	Simonet 1934a	H	Turkestan
imbricata	24	" "	HP	Transcauc., N. Persia
pallida (cengialtii)	24	" "	HP	Tyrol
variegata	24	" "	H	Balkans, cult
aphylla	24, 48	" "	H	E. Eur., Cauc., Siberia
belouini	48	" 1952	—	Morocco
cypriana	48	" 1934a	H	Cyprus
junonia	48	" 1952	H	Asia Minor
mesopotamica	48	" 1934a	H	Syria?
trojana	48	" "	H	Asia Minor
Bearded	145 vars.	24 (25)		
Irises	23 "	36 (35)		
	247 "	48 (46-53)		
	3 "	60 (63)		
		Randolph 1944	H	cult

x = 13

bloudowii	26	Simonet 1952	H	C. Asia
-----------	----	--------------	---	---------

S. 7. PARDANTHOPSIS x = 8

dichotoma	32	Simonet 1934a	H	Sib.—N. China
-----------	----	---------------	---	---------------

S. 8. ONCOCYCLUS x = 10

acutiloba	20	Simonet 1934a	H	Transcauc.
antilibanotica	20	" 1952	H	Anti-Lebanon
atrofusca	20	" "	H	Palestine
atropurpurea	20	" 1934a	H	Syria
aurantica & 10 spp.	20	" 1952	H	"
ewbankiana	20	" 1934a	H	Asia M., N. Pers.
iberica	20	" "	H	Cauc., N. Persia
barnumiae (mariae)	20	" "	H	S. Palest., Sinai
paradoxa	20	" "	H	Transcauc., N. Persia
sari	20, 21	" "	H	Asia Minor
sofarana	20	" "	H	Lebanon
susiana	20	" "	H	Persia
urmiensis	20	" "	H	Asia Minor

S. 9. REGELIA x = 11

korolkowii	22, 33, 44	Simonet 1934a	H	Turkestan
hoogiana	33, 44	" "	H	Kashmir, W. Tib.
stolonifera (leichtlinii, vaga)	44	" "	H	Bokhara, Turkestan

S. 10. PSEUDO-REGELIA x = 11?, 12?

kumaonensis	{ 22	Simonet 1952		
	24	La Cour unp.	H	Himalayas

S. 11. EVANSIA x = 13, 14, 15, 16, 17, 18, 22

tectorum Wall Iris	{ 24	Sakai 1952	HR	S.W. China, N. Burma
	28	Simonet 1934a		
milesii	26	" "	H	Himalayas
formosana	28	Yasui 1939	H	Formosa

IRIS (cont.)

<i>confusa</i> (as <i>wattii</i>)	{ 30	Simonet 1934a	H	W. China
	30	Snoad 1952		
<i>cristata</i> Crested Iris	32	Simonet 1934a	HSp	E: U.S.A.
<i>v. lacustris</i>	42	" "	H	N. Am. (Gr. Lak.)
<i>japonica</i>	{ 34, 54	Kazao 1929	HR	China, Japan (<i>cult</i>)
	36, 54	Yasui 1939		
<i>gracilipes</i>	36	Simonet 1934a	H	Japan
<i>speculatrix</i>	44	Snoad 1952	H	Hong Kong

HELIXYRA (IRIS) $x = 12$

<i>sisyrinchium</i> Spanish Nut	24	Simonet 1934a	HSp	Medit.—N.W. Ind.
---------------------------------	----	---------------	-----	------------------

HERMODACTYLUS (IRIS) $x = 10$

<i>tuberosus</i> Snake's Head Iris	20	Simonet 1928a	H	Levant
------------------------------------	----	---------------	---	--------

BELAMCANDA $x = 8$

<i>chinensis</i> Blackberry Lily	32	Nakajima 1936	H	China, Jap. N. Ind.
----------------------------------	----	---------------	---	---------------------

CHASMANTHE (ANTHOLYZA) $x = 8$

<i>aethiopica</i>	32	Nakajima 1936	H	S. Africa
-------------------	----	---------------	---	-----------

LAPEYROUSIA $x = 8$

<i>cruenta</i>	16	Brittingham 1934	H	S. Afr. (Cape)
----------------	----	------------------	---	----------------

SISYRINCHIUM $x = 8, 9$

sp.	16	Bowden 1945a	—	Chile
<i>labidum</i>	32	" "		W. Indies
<i>bellum</i>	32	" "	H	California
<i>montanum</i>	32, c. 96	Bøcher & L. 1950	—	N. America
sp.	64	Bowden 1945a	—	Chile
<i>angustifolium</i>	96	" "	H	N. America
<i>iridifolium</i>	18	" "	H	Brazil—Chile
<i>macrocarpum</i>	18	Covas & S. 1946	—	Argentine
<i>striatum</i>	18	Vilmorin & S. 1927b	H	Chile
<i>californicum</i>	{ 34	Maude 1940	H	California
	36	Bowden 1945a		
<i>brachypus</i>	36	" "	H	"
sp.	90	" "		

WATSONIA $x = 9$

<i>iridifolia</i>	18	Nakajima 1936	H	S. Africa
-------------------	----	---------------	---	-----------

DIERAMA $x = 10$

<i>pendulum</i>	20	Vilmorin & S. 1927b	H	Trop. Africa
-----------------	----	---------------------	---	--------------

IXIA $x = 10$

<i>crateroides</i>	20	Brittingham 1934	H	S. Africa
<i>viridiflora</i>	20	Collins unpub.	H	"
<i>maculata</i>	30	Nakajima 1936	H	"
<i>hybrida</i>	40	Brittingham 1934	H	<i>cult</i>
<i>speciosa</i> (Gl. <i>coccinea</i>)	60	Bamford 1935	H	S. Africa

TRITONIA $x = 10$

<i>crocata</i>	20	Brittingham 1934	H	S. Africa
----------------	----	------------------	---	-----------

MORAEA $x = 10, 14$

<i>iridioides</i>	{ 20 Sakai 1952	H	S. Africa
	40 Snoad unp.		
<i>ramosa</i>	20 Sakai 1952	H	"
<i>edulis</i>	28 " "	H	"

CROCOSMIA $x = 11$

<i>pottsii</i>	22 Nakajima 1936	H	S. Africa
<i>crococsmiiflora</i> M'bretia	{ 22, 33, 44 Brittingham 1934	H	<i>cult</i>
(<i>T. aurea</i> \times <i>C. pottsii</i>)	{ 22-24, 33 Meurman & S. 1946		

FREESIA $x = 11$

<i>refracta</i>	22 Brittingham 1934	H	S. Africa
v. <i>leichtlinii</i>	22 La Cour 1945 *		
<i>hybrida</i>	22, 33, 44 Lawrence 1945 *	H	<i>cult</i>

HOMERIA $x = 12$

<i>collina</i>	24 Sakai 1952	H	S. Africa
<i>elegans</i>	36 Brittingham 1934	H	"

CURTONIS (ANTHOLYZA) $x = 13$

<i>paniculatus</i>	26 Brittingham 1934	H	S. Africa
--------------------	---------------------	---	-----------

TIGRIDIA * $x = 13?, 14?$

<i>pavonia</i> Tiger Flower	26 Brittingham 1934	H	Mexico
2 vars.	28 Sakai 1952		

GLADIOLUS * $x = 15$

(i) <i>alatus (namaquensis)</i>	30 Bamford 1935	H	S. Africa
<i>permeabilis</i>	30 " "	H	"
<i>formosus</i>	45 " "	H	<i>cult</i>
(ii) <i>cardinalis</i>	30 " "	H	S. Africa
<i>carmineus</i>	30 " "	H	"
<i>splendens</i>	30 " "	H	"
(iii) <i>blandus</i> & 6 spp.	30 " "	H	"
<i>papilio</i>	75 " "	H	"
(iv) <i>byzantinus</i>	{ 60 Mensinkai 1939b	H	Medit.
	90 Bamford 1935		
<i>illyricus</i>	{ 60 Fernandes 1950b	H	"
	90 Bamford 1941		
<i>atroviolaceus</i>	90 " 1935	H	Syria, Persia
<i>communis</i>	90, 180 " 1941	H	Medit.
<i>segetum</i>	120 " 1935	H	"
(v) <i>angustus</i> & 9 spp.	30 " 1935	H	S. Africa
(vi) <i>saundersii</i>	30, 45 " "	H	"
<i>platyphyllus</i>	60 " "	H	"
<i>primulinus</i>	60 " "	H	"
<i>quartinianus</i>	75 " "	H	Abyss., <i>cult</i>
<i>dracocephalus</i>	{ 75, 90 " "	H	Natal
	80 Mensinkai 1939b		
<i>psittacinus</i>	75, 90 Bamford 1935	H	S.E. Africa
<i>colvillei</i>	30, 45 " "	H	<i>cult</i>
<i>nanus</i>	30, 45, 60 " "	H	"

HOMOGLOSSUM (GLADIOLUS)	$x = 15$			
<i>watsonius</i>	30	Bamford 1941	H	S. Africa
ROMULEA	$x = 17$			
<i>bulbocodium</i>	34	Fernandes <i>et al.</i> '48	H	W. Medit.
<i>parviflora</i>	c. 60	M. & S. 1935	H	S. Africa

Group IV

DIOSCOREALES

308-311

H

AGAVALES

312-313

HS

PALMALES

314

HST

PANDANALES

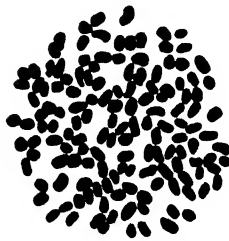
315

ST

CYCLANTHALES

316

H



Dioscorea batatas

310 ROXBURGHACEAE

STEMONA $x = 7$

<i>japonica</i>		14	Suzuka & K. 1949	MR	Japan
-----------------	--	----	------------------	----	-------

311 DIOSCOREACEAE

DIOSCOREA $x = 10$

<i>caucasia</i>		20	B. W. Smith 1937	—	Caucasia
<i>quinqueloba</i>	Japanese Yam	20	" "	R	Japan
<i>gracillima</i>		20	Nakajima 1933	—	"
<i>tokoro</i>		20	" "	—	"
<i>japonica</i>		40	" "	—	"
<i>discolor</i>		40	" "	H	S. America
<i>macroura</i>		40	B. W. Smith 1937	—	Trop. Africa
<i>alata</i>	Lisbon or White Y.	40	Simmonds 1954	R	Trop. Asia
		c. 81	Nakajima 1936		
<i>sativa</i>	Yam	60	" "	R	S.E. Asia, <i>cult</i>
<i>villosa</i>		60	B. W. Smith 1937	—	N. America
<i>reticulata</i>		61	" "	—	Chile
<i>fargesii</i>		64	" "	—	China
<i>bulbifera</i>	Air Yam	80	Nakajima 1936	HR	Trop. Asia
<i>cayennensis</i>	Attoto Yam	c. 140	B. W. Smith 1937	R	Guiana, Brazil
<i>oppositifolia</i>	E. Indies Y.	c. 140	" "	R	E. Indies
<i>batatas</i>	Chinese Yam	c. 144	" "	R	China, <i>cult</i>
<i>pentaphylla</i>		c. 144	" "	(R)V	Trop. Asia

BORDEREA (DIOSCOREA) $x = 12$

<i>chouardii</i>		24	Heslot 1953	—	Pyrenees
<i>pyrenaica</i>		24	" "	—	"

TAMUS $x = 12$

<i>communis</i>	Black Bryony	48	Meurman 1925	HM	Eur., Pers., N. Afr.
-----------------	--------------	----	--------------	----	----------------------

312 XANTHORRHOACEAE

XANTHORRHOEA $x = 11$

<i>hastile</i>	Grass Tree	22	J. T. Waterhouse unp. T		E. Australia
<i>media</i>		22	" "	—	" "
<i>preissii</i>		22	" "	—	W. Australia

313 AGAVACEAE

PHORMIUM $x = 16$

<i>tenax</i>	N.Z. Flax	32	Sato 1932	HT	New Zealand
<i>colensoi</i>	Mtn. Flax	—		HT	" "

NOLINA $x = 18, 19$

<i>microcarpa</i>		36	Sato 1942	HT	S.W. U.S.A.
<i>parryi</i>		38	Lenz 1950	H	S. California

CORDYLINE $x = 19$

<i>australis</i>	Cabbage Tree	38	Bowden 1945a	HT	New Zealand
		120	M. & S. 1935		
<i>indivisa</i>		38	Sato 1942	HT	" "

DASYLIRION $x = 19$

<i>acrotrichum</i>		38	Sato 1942	AHTV	Mexico
<i>longissimum (quadrangulatum)</i>		38	" "	AHTV	"
<i>texanum</i>		38	Sato 1935b	AHTV	Texas
<i>wheeleri</i>		38	" "	AGTV	Mexico

DRACAENA (CORDYLINE) $x = 19$

<i>arbores</i>		38	McKelvey & S. 1933	T	Trop. Africa
<i>deremensis</i>		38	Sato 1942	H	" "
<i>draco</i>	Dragon Tree	38	Bowden 1940a	HReT	Canary Is.
<i>terminalis (spicata)</i>		38	Sato 1935b	HT	E. Indies
<i>fragrans</i>		38	Whitaker 1934a	T	Trop. Africa
		42	Guard & H. 1941		
<i>cylindrica</i>		39	Sato 1942	H	W. Tr. Africa
<i>thalioides</i>		40	" "	H	Trop. Africa
<i>cannaefolia</i>		c. 114	" 1935b	T	Australia
<i>congesta (stricta)</i>		c. 114	" "	M	Mal., Austr.

SANSEVIERIA $x = 20, 21$

<i>zeylanica</i>	Nagaset, Ceylon	40, 42	M. & S. 1935	HT	Ceylon
	Bowstring Hemp	42	E.K.J.*		
<i>roxburghiana</i>	Indian B. H.	40	Patel & N. 1937	HT	India
<i>metallica</i>		40	Sato 1942	H	cult
<i>grandis</i>		100	" "	T	Trop. Africa
<i>cylindrica</i>	Ife H.	102-104	Heitz 1926	HT	" "

DORYANTHES $x = 24$

<i>excelsa</i>		48	Sato 1938	H	Australia
<i>guilfoylei</i>		48	" "	H	"
<i>palmeri</i>		48	" "	H	"

BESCHORNERIA $x = 30$

<i>tubiflora</i>		60	Sato 1938	H	Mexico
------------------	--	----	-----------	---	--------

BRAVOA $x = 30$

<i>geminiflora</i>		60	Sato 1942	H	C. Mexico
--------------------	--	----	-----------	---	-----------

FURCRAEA (FOURCROYA) $x = 30$

<i>gigantea</i>	Mauritius H.	60	M. & S. 1935	HT	C. Amer., W. Ind.
<i>pubescens</i>		60	" "	HT	Mexico
<i>bedinghausii</i>		60	McKelvey & S. '33	H	"
<i>selloa</i>		60	Devidé unp.	H	Guatemala

HESPEROYUCCA (YUCCA) $x = 30$

<i>whipplei</i>		60	McKelvey & S. '33	H	California
-----------------	--	----	-------------------	---	------------

HESPERALOË $x = 30$

<i>parviflora</i>		60	McKelvey & S. '33	H	California
-------------------	--	----	-------------------	---	------------

MANFREDIA (AGAVE) $x = 30$

<i>virginica</i>		60	McKelvey & S. '33	T	S.E. U.S.A.
------------------	--	----	-------------------	---	-------------

POLYANTHES (POLIANTHES) $x = 30$					
<i>tuberosa</i>	Tuberosa	60	Sato 1938	HP	Mex., <i>cult</i>
RUNYONIA $x = 30$					
<i>longiflora</i>		60	Granick 1944	—	Mexico
SAMUELA $x = 30$					
<i>faxoniana</i>	Date Yucca	60	McKelvey & S. '33	H	W. Texas
YUCCA * $x = 30$					
<i>alofolia</i>	Spanish Bayonet	60	Watkins 1936	H	Mex., W. Indies
<i>arkansana</i>	& 4 spp.	60	" "	H	S: C. U.S.A.
<i>australis</i>		60	Snoad 1952	H	Mexico
<i>wrightii</i>		60	M. & S. 1935	—	—
<i>filamentosa</i>	& 6 spp.	60	McKelvey & S. '33	(F)H	S.E: U.S.A.
AGAVE * $x = 30$					
<i>amaniensis</i>		60	Doughty 1936	T	<i>cult</i>
<i>bouchei</i>	& 4 spp.	60	Vignoli 1936, 1937		C. America
<i>brevispina</i>	& 4 spp.	60	Granick 1944		N.E. Mexico
<i>consociata</i>	& 2 spp.	60	McKelvey & S. 1933	T	California
<i>deserti</i>		60	Lenz 1950		Colo. Desert, Cal.
<i>lespinassei</i>		60	Doughty 1936	—	Yucatan
<i>shawii</i>		60	Lenz 1950		California
<i>vivipara</i>	& 3 spp.	60	Sato 1935, 1942	T	W. Ind., Guatem.
<i>angustifolia</i>	Ketki	{ 60	Doughty 1936	T	W. Indies
		120	Granick 1944		
<i>americana</i>	Century Pl.	60, 120, 180	" "	HT	Mexico, Arizona
<i>v. albo-marginata</i>		120, 226	Sato 1935		
<i>candelabrum</i>		c. 90	Vignoli 1936	T	Mexico
<i>cantala</i>	Kantala	90	Doughty 1936	T	"
<i>lurida</i>		c. 90	Vignoli 1936	T	"
<i>zapupe</i>		{ 90	Sato 1942	T	"
		110	Doughty 1936		
<i>melliflua</i>	& 7 spp.	120	Granick 1944	AT	"
<i>salmiana</i>		120	Vignoli 1936	T	"
<i>variegata</i>		120	Sato 1935		C. America
<i>fourcroyoides</i>	Henequen	138	Doughty 1936	T	Yucatan
<i>sisalana</i>	Sisal Hemp	{ 138	" "	T	Mexico
		c. 149	Granick 1944		
<i>atrovirens</i>		180	Sato 1938	T	"
<i>ghiesbreghtii</i>		180	Vignoli 1936	T	"
HOSTA (FUNKIA) $x = 30$ (Apomixis) [from Liliaceae]					
<i>lancifolia (Japonica)</i>		60	Akemine 1935	H	Japan
<i>fortunei</i>		60	Yasui 1935	H	"
<i>plantaginea</i>	Plantain L.	60	" "	H	Jap., China
<i>steboldiana</i>		60	" "	H	Japan
<i>venusta</i>		60	" "	—	"
<i>ventricosa</i>		60	Sato 1942	—	"
<i>clausa</i>		90	Yasui 1935	—	Korea

314 PALMAE

NIPA $x = 8?$					
<i>fruticans</i>	Nipa Palm	16	Radermacher 1925	ASuT	Ceylon, Burma— Australia
LICUALA $x = 8, 14$					
<i>grandis</i> (as <i>Pritchardia</i>)		16	Venkatasubban '45b	H	New Britain
<i>peltata</i>		28	„ „	T	India, Burma
WASHINGTONIA (BRAHEA)		$x = 18?$			
<i>filifera</i>	Skirt Palm	36	Sato 1952	HSh	S.W: U.S.A.
CHAMAEDOREA $x = 13?$					
<i>sartorii</i>		c. 12	Suessenguth 1920	HT	Mexico
<i>corallina</i>		c. 26	Söderberg 1919	HT	Venezuela
<i>elatiior</i> (<i>karwinskyana</i>)		26	Suessenguth 1920	—	Mexico
<i>glaucofolia?</i>		26	„ „	HT	„
COLLINIA (CHAMAEDOREA)		$x = 13$			
<i>elegans</i>		26	E.K.J.*	H	Mexico
CALAMUS $x = 14$					
<i>caryotoides</i>		28	E.K.J.*	HT	Australia
DIDYMOSPERMA $x = 14$					
<i>porphyrocarpum</i>		28	Gassner 1941	—	India, Malaya
PINANGA $x = 14$					
<i>disticha</i>		28	Gassner 1941	—	India
ZALACCA $x = 14$					
<i>affinis</i>		28	Bosch 1947	—	Malaya
CHRYSALIDOCARPUS (DYPSIS)		$x = 14?, 16?, 18?$			
<i>lutescens</i>		28	Gassner 1941	H	Madagascar
as <i>Areca</i>		32	Venkatasubban 1945b	H	„
<i>madagascariensis</i>		36	„ „	H	„
ACTINOPHLOEUS (KENTIA, PTYCHOSPERMA)		$x = 16$			
<i>angustifolius</i>		32	Rawi, D. 1951		New Guinea
<i>macarthurii</i>		32	Sato 1946	H	„ „
<i>sanderianus</i>		32	Venkatasubban 1945b	H	„ „
ARECA $x = 16$					
<i>catechu</i>	Betel Nut	32	Sato 1946	DMToW	Trop. Asia, <i>cult</i>
<i>triandra</i> (<i>aliciae</i>)		c. 32	E.K.J.*	HV	India, Malaya
		32	Rawi, D. 1951		
ARECASTRUM (COCOS)		$x = 16$			
<i>romanzoffianum</i>	Queen P.	32	E.K.J.*, Sato 1946	HV	Trop. S. Amer.
ARENGA $x = 16$					
<i>pinnata</i>	Sugar Palm	26	E.K.J.*		
(<i>saccharifera</i>)		32	Sato 1946	ASuSuVT	India, Malaya
		32	Venkatasubban 1945b		
<i>engleri</i>		32	Sato 1946	HT	Formosa
ARIKURYROBA (COCOS)		$x = 16$			
<i>schizophylla</i>		32	Venkatasubban '45b	H	Brazil

ATTALEA $x = 16$					
<i>cohune</i>	Cohune Palm	32	Sato 1946	AOT	Honduras
<i>spectabilis</i>		32	Gassner 1941		Brazil
BUTIA (COCOS) $x = 16$					
<i>bonnetii</i>		32	Sato 1946	H	Brazil
<i>capitata</i>	Yatay Palm	32	„ „ E.K.J.*	H	„
CARYOTA $x = 16$					
<i>urens</i>	Kitul	32	Sato 1946	AHStSuTW	Trop. Asia
COCOS $x = 16$					
<i>nucifera</i>	Coconut	{ 32	Santos 1928,	ABNOSuTTToW	
		32	E.K.J.*		Pacific, cult
CYRTOSTACHYS $x = 16$					
<i>lakka</i>	Sealing Wax P.	32	Rawi, D. 1951	H	Mal., E. Indies
DICTYOSPERMA $x = 16$					
<i>album</i>		32	Venkatasubban '45b	H	Mascarene Is.
ELAEIS $x = 16$					
<i>guineensis</i>	Oil Palm	{ 32	Sato 1946, E.K.J.*	AHMOTV	
		32	Venkatasubban '45b		Trop. Africa
EXORRHIZA $x = 16$					
<i>savoryana</i>		32	Sato 1946	—	Bonin Is.
HETEROSPATHE $x = 16$					
<i>elata</i>		32	Venkatasubban '45b	H	Philippines
HYOPHORBE $x = 16$					
<i>verschaffeltii</i>	Spindle P.	32	Sato 1946	H	Mascarene Is.
JUBAEA $x = 16$					
<i>spectabilis</i>	Coquito	32	Sato 1946	HNSuTW	Chile
LATANIA $x = 16$					
<i>commersonii (rubra)</i>		32	Venkatasubban '45b	FHT	Mascarene Is.
<i>verschaffeltii (aurea)</i>		32	Bosch 1947	HW	„ „
NEPHROSPERMA $x = 16$					
<i>van houtteana</i>		32	Venkatasubban '45b	H	Seychelles
ONCOSPERMA $x = 16$					
<i>filamentosum</i>	Nibung P.	32	Venkatasubban '45b	TVW	Malaya
ORBIGYNA $x = 16$					
<i>lydlae</i>		32	Gassner 1941	—	Brazil
RAPHIA $x = 16$					
<i>ruffia</i>	Raffia	32	Sato 1946	HT	E. Afr., Madag.
STEVENSONIA $x = 16$					
<i>borsigiana (grandiflora)</i>		32	Rawi, D. 1951	H	Seychelles

AIPHANES (MARTINEZIA)		$x = 16, 18$			
<i>caryotaefolia</i>		{ 32	Sato 1946	H	S. America
		{ 32	Venkatasubban '45b		
<i>erosa</i>		36	Gassner 1941	—	W. Indies
HOWEA		$x = 16, 18$			
<i>forsteriana</i>		32	Venkatasubban '45b	H	Lord Howe Is.
<i>belmoreana</i>		36	Sato 1946	H	" "
RHAPIS		$x = 16, 18$			
<i>excelsa (flabelliformis)</i>		{ 32	Bosch 1947		
		{ 36	Sato 1946	HTo	S. China
		{ 36	Venkatasubban '45b		
<i>humilis</i>		36	Sato 1946	H	"
BORASSUS		$x = 18$			
<i>flabellifer</i>	Palmyra P.	{ 36	Venkatasubban '45b	AFMSuTVW	
		{ 36	Bosch 1947		India, Mal.
CHAMAEROPS		$x = 18$			
<i>humilis</i>	Fan P.	36	Sato 1946	HT	W. Medit.
COCCOTHRINAX (THRINAX)		$x = 18$			
<i>argentea</i>		{ 36	Sato 1946		
		{ 36	Venkatasubban '45b	H	San Domingo
COPERNICIA		$x = 18$			
<i>cerifera</i>	Carnauba Wax P.	36	E.K.J.*	FMOSTSuTW	W. Ind., Brazil
EUPRITCHARDIA (PRITCHARDIA)		$x = 18$			
<i>pacifica</i>		36	Venkatasubban '45b	HT	Fiji
<i>filifera</i>		36	" "	FH	W: N. America
HYPHAENE		$x = 18$			
<i>wildbrandi</i>		36	Sato 1946	FT	Trop. Africa
LIVISTONIA		$x = 18$			
<i>chinensis</i>	Chinese Fan P.	36	Venkatasubban '45b	HT	C. China
<i>v. subglobosa</i>		36	Sato 1946		
<i>rotundifolia</i>		36	Venkatasubban '45b	HSt	Malaya
PHOENIX		$x = 18$			
<i>canariensis</i>		36	Beal 1937	FTW	Canary Is.
<i>dactylifera</i>	Date Palm	{ 28?	Doulat 1944	AFTW	Persia, cult
		{ 36	Beal 1937		
<i>humilis (hanceana)</i>		36	" "	FHT	Ind., Bur., China
<i>paludosa</i>		36	Venkatasubban '45b	HT	Bengal—Cochin.
<i>pusilla (farinifera)</i>		36	Patel & N. 1937	AFStSuT	India, Ceylon
<i>reclinata</i>		36	Beal 1937	AFHT	Trop. Africa
<i>sylvestris</i>		36	" "	AMSuT	India
SABAL		$x = 18$			
<i>bermudana</i>	Ber. Palmetto	36	Sato 1946	HT	Bermuda
<i>(blackburniana)</i>					
<i>causiarum</i>	P.R. Hat P.	36	Bowden 1945b	TW	Puerto Rico
<i>minor</i>	Dwarf Palmetto	36	" "	H	S.E: U.S.A.

SABAL (cont.)					
<i>palmetto</i>	Cabbage P.	36	Bowden, 1945b	HTVW	S.E : U.S.A.
<i>umbraculifera</i>		36	Venkatasubban '45b	H	Hispaniola
THRINAX $x = 18$					
<i>excelsa</i>		36	Venkatasubban '45b	H	Jamaica
<i>morrissi</i>		c. 36	E.K.J.*	H	W. Indies
TRACHYCARPUS (CHAMAEROPS) $x = 18$					
<i>fortunei</i>	Windmill P.	36	Sato 1946	HTV	China, Jap., Bur.
<i>(excelsa)</i>					
TRITHRINAX $x = 18$					
<i>brasiliensis</i>		36	Sato 1946	H	S. Braz., Parag.
CORYPHA $x = 18$					
<i>umbraculifera</i>	Talipot P.	36	Olah 1954	T	India, Ceylon
ROYSTONEA (OREODOXA) $x = 18, 19$					
<i>oleracea</i>	Cabbage P.	36	Simmonds 1954	V	W. Indies
<i>regia</i>	Cuba Royal P.	{	36 Venkatasubban '45b	H	„
			38 Sato 1946		

315 PANDANACEAE

PANDANUS $x = 30, 32$					
<i>pacificus</i>		60	Tjio 1948	H	Pacific Is.
<i>pygmaeus</i>		60	„ „	H	Madagascar
<i>boninensis</i>		c. 64	Harada 1947	H	Pacific Is.

316 CYCLANTHACEAE

CARLUDOVICA $x = ?$					
<i>palmata</i>		18	E.K.J.*	HT	S. America
<i>latifolia</i>		30	Harling 1946	—	W. Indies
<i>insignis</i>	Panama-hat Pl.	32	E.K.J.*	H	W. I., Trop. Amer.

Group V

HAEMODORALES

317-322

H(ST)

BURMANNIALES

323-325

H

ORCHIDALES

326

H



Cephalanthera erecta

317 HAEMODORACEAE

ANIGOZANTHUS $x = 6$

<i>flavidus</i>	Kangaroo Paw	12	Stenar 1927	H	Australia
-----------------	--------------	----	-------------	---	-----------

318 HYPOXIDACEAE

RHODOHYPOXIS $x = 6$

<i>baueri</i>		12	Sato 1942	H	S. Africa
---------------	--	----	-----------	---	-----------

CURCULIGO $x = 9$

<i>recurvata (capitulata)</i>		18	Sato 1938, Tjio 1948	H	Tr. Asia, Austr.
<i>sumatrana</i>		18	Tjio 1948	—	Trop. Asia
<i>orchioides</i>	{	18	Sheriff 1946	HM(R)	,,
		c. 50	Sato 1938		

HYPOXIS $x = 11$

<i>pusilla</i>		22	W. D. Jackson unp.	—	Australia
----------------	--	----	--------------------	---	-----------

321 TACCACEAE

TACCA $x = 15$

<i>involutrata</i>		30	Baldwin & S. 1951a	—	Trop. Africa
--------------------	--	----	--------------------	---	--------------

326 ORCHIDACEAE

VANDA $x = 9?, 19$

<i>tricolor</i>	{	18, 36	Hoffmann 1930	H	Java
		28	Heim 1941		
		38	Woodard 1952		
		38	Storey 1953		
<i>coerulea</i>		38	Storey 1953	H	Assam, Bur., Siam
<i>hookeriana</i>		38	„ „	H	Borneo
<i>sanderiana</i>		38	„ „	H	Philippines
<i>teres</i>		38	„ „	H	Burma, Siam
Garden vars.		38, 95	„ „	H	<i>cult</i>

PLEIONE $x = 10$

<i>pricei</i>	20 + 1B	La Cour 1952	H	Formosa
<i>formosana</i>	40	Miduno 1940	H	„

SPIRANTHES $x = 10$

<i>sinensis</i>	20	Miduno 1939	H	Tr. & Temp. Asia
<i>spiralis</i>	30	Hagerup 1944	H	Eur., N. Afr., Asia Minor

CYPRIPEDIUM $x = 10, 11$

<i>acaule</i>	20	Belling 1926	H	E: N. America
<i>pubescens</i>	20	„ „	HM	N. America
<i>reginae (spectabile)</i>	22	Hoffmann 1930	H	E: N. America
<i>as hirsutum</i>	20	Humphrey 1934		
<i>calceolus</i> Lady's Slipper	22	Francini 1931	H	Eurasia
<i>parviflorum</i>	20	Carlson 1945	H	N. America

DENDROBIUM $x = 10, 19$

<i>nobile</i>	20	Hoffmann 1930	H	Himal., China
	40	Heim 1941		
<i>bronckartii</i>	40	" "	H	Annam
<i>chrysotoxum</i>	40	Hoffmann 1930	H	Burma
<i>infundibulum</i>	40	" "	H	"
<i>superbum</i>	40	Heim 1941	H	Philippines
<i>thyrsiflorum</i>	40	Hoffmann 1930	H	Burma
<i>wardianum</i> v. <i>giganteum</i>	40	" "	H	"
<i>monile</i> (<i>catenatum</i>)	38	Miduno 1940	H	China, Japan

EPIPACTIS $x = 10, 16, 18, 19$

<i>helleborine</i>	Helleborine	20, 40	Weijer 1952	—	Eur., N. Asia, N.
(<i>latifolia</i>)		38, 40	Hagerup 1947		Africa
<i>shizuoi</i>		32	Miduno 1938	—	Japan
<i>leptochila</i>		36, 40	Hagerup 1947	—	Europe
<i>atrorubens</i> (<i>atropurpurea</i>)		40	" "	—	Eur., N. As., Cauc.
<i>microphylla</i>		40	" "	—	Asia M., Cauc.
<i>palustris</i>		40	" "	—	Eur., N. Afr., T.
					Asia
<i>confusa</i> (<i>persica</i>)		40	" "	—	Persia
<i>thunbergii</i>		40	Miduno 1938	—	Japan

GOODYERA $x = 11, 14, 15$

<i>procera</i>		22	Afzelius 1943	—	Ind., Mal., China
		42	Miduno 1939		
<i>hachijoensis</i>		28	" "	—	Japan
<i>matsumurana</i>		28	" "	—	Luikiu Is.
<i>macrantha</i>		30	" "	H	Japan
<i>repens</i>		30	Richardson 1935	H	N. Temp.
<i>maximowicziana</i>		42	Miduno 1939	—	Japan

HIMANTOGLOSSUM $x = 12$

<i>hircinum</i>	Lizard O.	24, 36	Heusser 1938	—	C. & S. Eur., N.
					Africa

THELYMITRA $x = 13$

<i>longifolia</i>		26	Hair 1942	—	New Zealand
-------------------	--	----	-----------	---	-------------

ONCIDIUM $x = 13, 14$

<i>bicallosum</i>		28	Hoffmann 1930	H	Guatemala
<i>flexuosum</i>		28	" "	H	Brazil
<i>varicosum</i>		56	" "	H	"
<i>excavatum</i>		52	Heim 1941	H	Peru

PAPHIOPEDILUM * $x = 13, 14, 16, 17, 18, 19$

<i>bellatulum</i>	& 13 spp.	26	Duncan 1947	H	Burma
<i>philippinense</i>		26	Duncan & M. 1949b	H	Philippines
<i>concolor</i>		26	" " 1948	H	Burma
<i>hirsutissimum</i>		26, 27-28	Duncan 1947	H	Assam, India
<i>insigne</i>		26, 28	" "	H	Nepal
v. <i>Harefield Hall</i>		39	Mehlquist 1947	H	cult
<i>rothschildianum</i>		26, 28	Duncan 1947	H	Papua
<i>spicerianum</i>		26, 28, 30	" & M. 1949a	H	Assam
<i>praestans</i>		28	" 1947	H	Papua
<i>callosum</i>		32	" "	H	Cochin China

PAPHIOPEDILUM (cont.)

<i>chamberlainianum</i>	32	Duncan & M. 1949c	H	New Guinea
<i>mastersianum</i>	32	" 1947	H	Malaya
<i>dayanum</i>	34	" "	H	Borneo
<i>tonsum</i>	34	" "	H	Sumatra
<i>wardii</i>	34 + 6-9B	" "	H	Up. Burma
<i>curtisii</i>	36	" "	H	Sumatra
<i>glaucophyllum</i>	36	" "	H	Java
<i>javanicum</i>	36	" "	H	Java, Borneo
<i>lawrenceanum</i>	36	" "	H	Borneo
<i>barbatum</i>	38	" "	H	Malacca
<i>superbiens</i>	38	" "	H	"
<i>venustum</i>	42	" "	H	Nepal
<i>sublaeve</i>	58	" & M. 1950	H	Borneo, Siam
<i>maudiae</i>	34	McQuade 1949	H	cult
Garden forms	{ 26-29, 39-42, 53-56, 70	Duncan 1947	H	"
CALYPSO $x = 14$				
<i>bulbosa</i>	28	Hagerup 1944	H	N. Temp.
HAMMARBYA (MALAXIS) $x = 14$				
<i>paludosa</i> Bog O.	28	Hagerup 1944	—	Eur., Sib., N. Am.
HABENARIA $x = (7), 14, 21$				
<i>oldhami</i>	28	Miduno 1940	H	Japan
<i>sagittifera</i>	28	" 1939	—	Manch., Japan
<i>dilatata</i> Bog Orchis	42	Humphrey 1934	H	N. America
<i>straminea</i>	42	Harmsen 1943	—	Arctic
<i>dentata (geniculata)</i>	62	Miduno 1939	H	India, Burma
MALAXIS $x = 15?$				
<i>monophylla</i>	c. 30	Hagerup 1944	—	N. Temp.
LIPARIS $x = 15, 16, 21$				
<i>krameri</i>	30	Miduno 1939	—	Japan
<i>kumokiri</i>	30	" "	—	Korea, Japan
<i>makinoana</i>	30	" "	—	Japan
<i>loeselii</i>	32	Hagerup 1941b	H	N. Temp.
<i>nervosa</i>	42	Miduno 1940	—	Japan, China
LIMODORUM $x = 16$				
<i>abortivum</i>	64	Malvesin-F. & E. '49	—	Europe
STELIS $x = 16$				
<i>ciliaris (atropurpurea)</i>	32	Hoffmann 1930	H	Mexico
<i>miersii</i>	32	" "	H	Brazil
VANILLA $x = 16$				
<i>aromatica</i>	32	Heim 1950	H	Brazil, W. Ind.
<i>fragrans (plantifolia)</i> Vanilla	32	" "	HP	W. Indies
<i>hartii</i>	32	" "	—	"
<i>imperialis</i>	32	" "	H	Trop. Africa
<i>moonii</i>	32	" "	—	Ceylon
<i>papino</i>	32	" "	—	—
<i>pompona</i> W. Indian V.	32	" "	HP	Trop. America
<i>thartii</i>	32	" "	—	—

BLETILLA (BLETIA) $x = 16, 18$					
<i>striata (hyacinthina)</i>	32	Miduno 1954	H	China, Japan	
<i>formosana</i>	36	" "	—	Formosa	
CEPHALANTHERA $x = 16, 17, 18$					
<i>longifolia</i>	32	Hagerup 1947	—	Eur., N. Afr., W. & N. Asia	
<i>damasonium</i> Helleborine	{ 32	" "	—	Eur., N. Afr., Cauc.	
<i>(grandiflora)</i>	{ 36	Barber 1942			
<i>falcata</i>	34	Miduno 1938	H	Japan	
LISTERA $x = 17-21$					
<i>ovata</i> Twayblade	{ 34 + 1B	MacMahon 1936			
	{ 34, 36, 38	L. & L. 1944b	—	Eur., Cauc., Sib.	
	(17)	Hagerup 1947			
<i>cordata</i>	{ 38	S. & S. 1940	—	N. Temp.	
	{ 42	Blackburn, T. 1936			
ANACAMPTIS $x = 18$					
<i>pyramidalis</i>	36	Barber 1942	H	Eur., N. Afr., S.W. Asia	
ASCOTAINIA (TAINIA) $x = 18$					
<i>laxiflora</i>	36	Miduno 1940	H	Liukiu Is.	
NEOTTIA $x = 18$					
<i>nidus-avis</i> Bird's Nest O.	36	Barber 1942	—	Eur., Cauc., Sib.	
OPHRYS $x = 18$					
<i>apifera</i> Bee O.	36	Barber 1942	—	Eur., N. Africa	
<i>insectifera</i> Fly O.	36	" "	—	Europe	
<i>fuciflora</i> Late Spider O.	36	Heusser 1938	—	C. & S. Eur., S.W. Asia	
<i>sphegodes</i> Early S.O.	36	" "	—	Eur., N. Africa	
SARCANTHUS $x = 18$					
<i>rostratus</i>	36	Hoffmann 1930	H	China	
SERAPHIAS $x = 18$					
<i>vomeracea</i>	36	Heusser 1938	—	S. Europe	
ORCHIS (incl. DACTYLORCHIS) $x = 16, 18, 19, 20, 21$					
<i>papilionacea</i>	32	Heusser 1938	H	S. Europe	
<i>morio</i> Green-Winged O.	36	Hagerup 1938	—	Eur., Cauc., Sib.	
<i>coriophora</i>	38	Vermeulen 1949	—	Europe	
<i>aristata</i>	40	Miduno 1939	—	N.E. Asia	
<i>cruenta</i>	40	Vermuelen 1947	H	Europe	
<i>foliosa (maderensis)</i>	40	" "	H	Madeira	
<i>fuchsii (maculata)</i> Spotted O.	40	" "	—	Europe	
<i>pallens</i>	40	Heusser 1938	H	"	
<i>purpurea</i> Lady O.	{ 40	Heim 1941	H	Eur., Asia Min., Caucasus	
	{ 42	Vermuelen 1947			
<i>sambucina</i>	{ 40	" 1947	—	Europe	
	{ 42	Hagerup 1938			
<i>strictifolia</i> Marsh O.	40	" "	—	"	
<i>as latifolia</i>	40, 80	Maude 1939			
<i>traunsteineri</i>	40, 80, 120, 122	Vermuelen 1947	—	Eur., S.W. Asia	

ORCHIS (cont.)

<i>elodes (ericetorum)</i>		79, 80	Maude 1939	—	Eur.—Persia
<i>caucasica</i>		80	S. & S. 1940	—	Caucasus
<i>maculata</i>	Spotted O.	80	Vermuelen 1947	H	N.W. Europe
<i>majalis</i>		80	" "	—	Europe, etc.
<i>munbyana</i>		80	" "	—	N. Africa
<i>purpurella</i>		80	" "	—	N.W. Europe
<i>sesquipedalis</i>		80	" "	—	Spain, Portugal
<i>praetermissa</i>		80, 82	Maude 1939	—	N. Europe
<i>fuchsii</i> × <i>praetermissa</i>		60	J. Heslop-Harrison '53	—	<i>nat. hybrid</i>
<i>fuchsii</i> × <i>purpurella</i>		60	" "	—	" "
<i>globosa</i>		42	Diannelidis 1949	—	Eur., Asia Min.
<i>laxiflora</i>		42	Vermuelen 1947	—	Eur., N. Afr., S.W. Asia
<i>mascula</i>	Early Purple O.	42	" "	H	Eur., N. Afr., N. & W. Asia
<i>militaris</i>	Soldier O.	42	" "	H	Eur., As. M., Sib.
<i>palustris</i>		42	Heusser 1938	—	Eur., N. Afr., S.W. Asia
<i>provincialis</i>		42	" "	H	Europe
<i>rotundifolia</i>		42	Humphrey 1932	H	E: N. America
<i>simia</i>	Monkey O.	42	Heusser 1938	—	Eur., N. Afr., Caucasus
<i>spectabilis</i>		42	Humphrey 1932	H	E: N. America
<i>tridentata</i>		42	Heusser 1938	H	S. Europe
<i>usulata</i>	Dark-Winged O.	42	Vermuelen 1947	—	Eur., Cauc., Sib.
PLOGLOTTIS x = 19					
<i>javanica</i>		38	Afzelius 1943	H	Java
AERIDES x = 19, 20					
<i>japonicum</i>		38	Sugiura 1936a	H	Japan
<i>lawrenceae</i>		40	Heim 1941	H	Philippines
ANAGRAECUM x = 20					
<i>leonis</i>		40	Heim 1941	H	Comoro Is.
BRASSAVOLA x = 20					
<i>nodosa</i>		40	Kamemoto 1950	H	C. Amer., Brazil
<i>perrinii</i>		40	Afzelius 1943	H	Brazil
CALANTHE * x = 20					
<i>discolor</i>	& 5 spp.	40	Miduno 1940	H	Japan
CATTLEYA * x = 20					
<i>aurantiaca</i>	& 14 spp.	40	Kamemoto 1950	H	Cent. America
<i>labiata</i>		40, 41, 42	" "	H	Brazil
<i>bowringiana</i>		41	" "	H	Cent. America
Garden forms		40, 42, 60–62, 80, 83, 84	" " 1952	H	<i>cult</i>
COELOGLOSSUM x = 20					
<i>viride</i>	Frog O.	40, 80	Afzelius 1943	—	Eur., W. Asia, N. America
COELOGYNE x = 20					
<i>fimbriata</i>		40	Hoffmann 1930	H	Himalayas

COELOGYNE (cont.)

<i>flexuosa</i>	40	Hoffmann 1930	H	Java
<i>fuliginosa</i>	40	" "	H	N. India

CYMBIDIUM * $x = 20$

<i>insigne</i>	& 12 spp.	40	Mehlquist 1952	H	Annam
<i>bicolor</i>		40	Swamy 1941	H	Ceylon
<i>sinense</i>		40	Sugiura 1936a	H	China
Garden forms	40, 60, 80	Mehlquist 1952	H		<i>cult</i>

DENDROCHILUM (PLATYCLINIS) $x = 20$

<i>glumaceum</i>	40	Hoffmann 1930	H	Philippines
------------------	----	---------------	---	-------------

ELEORCHIS $x = 20$

<i>conformis</i>	40	Miduno 1939	—	Japan
<i>japonica</i>	40	" "	—	"

EPIDENDRUM * $x = 20$

<i>atropurpureum</i>	& 9 spp.	40	Kamemoto 1950	H	Brazil
<i>ramiferum</i>		40	Hoffmann 1930	H	Mexico
<i>ciliare</i>		40, 80, 160	Geitler 1940a	H	Trop. America
<i>nocturnum</i>		c. 80	Hoffmann 1930	H	" "
<i>radicans</i>		40, 70	" "	H	Guatemala
<i>xanthium</i>		60	" "	H	Brazil

GONGORA $x = 20$

<i>galeata</i>	40	Hoffmann 1930	H	Mexico
----------------	----	---------------	---	--------

GYMNADENIA $x = 20$

<i>conopsea</i>	Fragrant O.	{ 40	Diannelidis 1949	H	Eur., N. & W. A.
		{ 40, 80	S. & S. 1940	H	
<i>odoratissima</i>		40	Heusser 1938	H	Europe
<i>chidori</i>		42	Miduno 1940	H	Japan

LUISIA $x = 20$

<i>boninensis</i>	40	Miduno 1940	—	Bonin Is.
-------------------	----	-------------	---	-----------

HERMINIUM $x = 20$

<i>monorchis</i>	Musk O.	40	Heusser 1938	—	Eur., Cauc., Temp. Asia
------------------	---------	----	--------------	---	-------------------------

LAELIA $x = 20$

<i>anceps</i>	40	Kamemoto 1950	H	Mexico
<i>purpurata</i>	40	" "	H	Brazil
<i>rubescens</i>	40	" "	H	Mexico
<i>gouldiana</i>	40, 60	" "	H	"
<i>autumnalis</i>	41, 42	" "	H	"
<i>albida</i>	42, c. 63	" "	H	Guatemala

LAELIOCATTLEYA $x = 20$

Hybrids	60-63, 80	Kamemoto 1950	H	<i>cult</i>
---------	-----------	---------------	---	-------------

NIGRITELLA $x = 20$ (16?)

<i>nigra</i>	{ 40	Heusser 1938	H	Eur. Mtns.
	{ 64	Afzelius 1943		
<i>rubra</i>	80	Heusser 1938	—	" "

PHALAENOPSIS * $x = 19$

<i>schilleriana</i>	& 6 spp.	38	Woodard 1951	H	Philippines
<i>amabilis</i>	38, c. 114	" "	" "	H	<i>cult</i>

STANHOPEA $x = 20$				
<i>oculata</i>	40	Afzelius 1943	H	Mexico
<i>insignis</i>	40	Hoffmann 1930	H	Brazil
<i>hernandezii (tigrina)</i>	40	„ „	H	Mexico
ZYGOPETALUM $x = 20$				
<i>mackail</i>	40	Hoffmann 1930	H	Brazil
ACERAS $x = 21$				
<i>anthropophora</i> Man O.	42	Barber 1942	H	Eur., N. Africa
CHAMAEORCHIS $x = 21$				
<i>alpina</i>	42	Heusser 1938	—	Europe
CORALLORHIZA $x = 21$				
<i>innata</i>	42	Miduno 1940	H	Eur., N. Amer.
<i>trifida</i> Coral Root	42	L. & L. 1948		Eur., Sib., N. Am.
LEUCORCHIS $x = 21$				
<i>albida</i>	42	Heusser 1938	—	Eur., W. Sib.
PLATANThERA (HABENARIA) $x = 21$				
<i>bifolia</i> Lesser Butterfly O.	42	Diannelidis 1949	H	Eur., N. Afr., N. Asia
<i>chlorantha</i> Greater B. O.	42 (21)	Hagerup 1947	H	Eur., Cauc., Sib.
<i>hologlottis</i>	42	Miduno 1940	H	N. China
<i>hyperborea</i>	{ 42	Humphrey 1934	—	N. Temp.
	84	Harmsen 1943		
<i>oligantha</i>	126	Afzelius 1922	—	Dahuria
TRAUNSTEINERA $x = 21$				
<i>globosa</i>	42	Heusser 1938	—	Eur., Asia M.
ZEUXINE $x = 22$				
<i>sulcata</i>	44	Seshagiriiah 1941	H	India, Mal., China
PECTEILIS $x = 24$				
<i>radiata</i>	48	Miduno 1940	H	Japan
ORNITHIDIUM $x = 24?$				
<i>densum</i>	c. 48	Hoffmann 1930	H	Mexico

Group VI

JUNCALES

327-330

H(S)

CYPERALES

331

H

GRAMINALES

332

H(ST)



Sieglingia decumbens

327 JUNCACEAE

LUZULA * $x = 3-36$ (Chromosomes polycentric)

<i>purpurea</i>		6	Nordenskiöld 1952	—	Canary Is.
<i>bulbosa</i>	& 8 spp.	12	"	—	E: N. America
<i>lactea</i>		12	Malheiros & G. '47	—	Iber. Penin.
<i>nemorosa</i>	& 1 sp.	12	Wagner 1949	—	Eur., W. Asia
<i>campestris</i>	Sweep's Brush	12, 36	Nordenskiöld 1951	—	Cosmop.
<i>comosa</i>		12, 24	" "	—	W: N. America
<i>henriquesii</i>		{ 12	" "	—	Portugal
		{ c. 84	Fernandes 1950b	—	
<i>multiflora</i>		{ 12	Malheiros & G. '47	—	Cosmop.
		{ 24, 36, 48	Gardé & G. 1952	—	
<i>pallescens</i>		{ 12	Nordenskiöld 1951	—	C. & N. Eur.—
		{ 36	Wagner 1949	—	Japan
<i>spicata</i>	Spiked Woodrush	12, 14, 24	Nordenskiöld 1951	—	North Reg.
<i>orestra</i>		20, 22	" "	—	California
<i>alopecurus</i>		24	Wagner 1949	—	S. S. Amer.
<i>forsteri</i>	& 7 spp.	24	Nordenskiöld 1951	—	Eur., W. Asia, N. Africa
<i>wahlenbergii</i>		{ 24	" "	—	Arctic
		{ 36	L. & L. 1944a	—	
<i>frigida</i>		36	Nordenskiöld 1951	—	Scandinavia Mts.
<i>arcuata</i>		36, 42	" "	—	North Reg.
<i>congesta</i>		36, 48	" "	—	W. Europe
<i>sudetica</i>		{ 36	L. & L. 1944a	—	N. Eur. Mts.
		{ 48	Nordenskiöld 1951	—	
		{ 54	Michalska 1953	—	
<i>acuminata</i>		48	Nordenskiöld 1951	—	N. America
<i>confusa</i>		48	L. & L. 1948	—	N. & Arctic
<i>johnstonii</i>		42	Nordenskiöld 1951	—	E. Trop. Africa
<i>rufescens</i>		52	" "	—	Siberia
<i>pilosa</i>	Hairy Woodrush	{ 66	" "	—	North Reg.
		{ 72	Hagerup 1944	—	

OXYCHLOË $x = 8$

<i>andina</i>	16	Sasaki 1937	—	S. America
---------------	----	-------------	---	------------

JUNCUS $x = 10$ (?)

<i>tenuis (macer)</i>		{ 30	L. & L. 1948	T	N. & S. Amer.
		{ 32	Sasaki 1937	—	
<i>trifidus</i>		30	L. & L. 1944a	—	N. Reg., Alpine
<i>acutiflorus</i>		40	Timm & C. 1940	—	Eur., N. Asia, E: N. America
<i>alpinus</i>		40	L. & L. 1944a	—	North Reg.
<i>anceps</i>		40	Wulff 1937a	—	W. & S. Europe
<i>bulbosus (supinus)</i>		40	L. & L. 1944a	—	Eur., W. Asia, N. Africa
<i>castaneus</i>	Chestnut Rush	40	" 1948	—	North Reg.
<i>conglomeratus</i>		40	" "	—	Asia M.—Nfld.
<i>effusus</i>	Soft Rush	40	" 1944a	HT	Cosmop.
<i>emmanuelensis</i>		40	Fernandes <i>et al.</i> '48	—	Europe
<i>inflexus</i>	Hard Rush	40	L. & L. 1948	—	Eurasia, N. Afr.
<i>maritimus</i>	Sea Rush	40	" 1944a	T	N. & S. Temp.
<i>squarrosus</i>	Heath Rush	40	" 1948	—	Eur., Arctic
<i>subnodulosus</i>		40	Richards & C. 1941	—	Eur., N. Asia, N. Afr., E: N. Am.
<i>filiformis</i>		40, c. 80	L. & L. 1948	T	N. Reg., Patag.

JUNCUS (cont.)

<i>triglumis</i>	50	L. & L. 1944a	—	North Reg.
<i>articulatus</i> Jointed R.	{ c. 60	Wulff 1937a	T	N. Temp.
	80	Timm & C. 1940	—	nat. hybrid
<i>acutiflorus</i> × <i>articulatus</i>	60	" "	—	N. & S. Temp.
<i>bufonius</i> Toad Rush	c. 60, c. 120	Wulff 1937a	T	Japan
<i>prominens</i>	c. 64	Sasaki 1937	—	N. Temp.
<i>gerardi</i> (<i>bottnicus</i>) Mud Rush	80	Wulff 1937a	T	N.W. Eur., N. Am.
<i>nodulosus</i>	80	L. & L. 1948	—	North & Arctic
<i>arcticus</i>	c. 100	" 1944a	—	

331 CYPERACEAE

BULBOSTYLIS x = 5

<i>barbata</i>	10	Tanaka 1941	—	Australia
<i>capillaris</i>	84	" 1937	T	N. America

FIMBRISYTLIS * x = 5, 6, 8, 11

<i>autumnalis</i>	10	Tanaka 1939a	—	N. & S. America
<i>miliacea</i>	10	" "	—	Tropics
<i>sub-bispicata</i>	10	" "	Fo	Trop. Asia
<i>complanata</i>	16	" "	—	Tropics
<i>aestivalis</i> & 3 spp.	20	" "	—	Trop. Asia, Austr., America
<i>makinoana</i>	24	" "	—	Japan
<i>sericea</i>	44	" "	—	Tr. Asia & Austr.

ELEOCHARIS (HELEOCHARIS) x = 5, 8, 9 (Chromosomes polycentric)

<i>parvula</i>	10	Wulff 1937a	—	Eur., N. Amer., Afr., Japan
<i>palustris</i>	{ 10, 16	Levitsky 1940	—	Europe
	36	Hicks 1929	—	
	38	Håkansson 1954	—	Japan
<i>japonica</i>	20	Tanaka 1937	—	Eur., N. Africa
<i>multicaulis</i>	20	Håkansson 1928	—	
<i>acicularis</i> Spike Rush	{ c. 20	Tanaka 1937	—	N. & S. Temp.
	56?	Hicks 1929	—	N. America
<i>tuberculosa</i>	30?	" "	—	
<i>uniglumis</i>	{ 16, 32	L. & L. 1948	—	Eur., W. Asia, N. Africa
	46	Walters 1949	—	
<i>quinqueflora</i>	{ c. 69, 92	Hartshorne unp.	—	N. & Arctic
	80, c. 100	A. Löve 1954	—	

CAREX * x = 6, 7, 8, 9, 10, 13, etc. (Chromosomes polycentric)

<i>siderosticta</i>	12, 24	Tanaka 1940	—	China
<i>divisa</i>	14	Tarnavski, T. 1950	—	Eur., Him., S. Afr.
<i>bicolor</i>	16	Reese 1953	—	Arctic, Alp.
<i>lasiolepis</i>	16	Tanaka 1939b	—	Japan
<i>grallatoria</i>	18	" "	—	Kiu-Siu Is.
<i>pilulifera</i>	18	Heilborn 1924	—	Eur., N. Asia
<i>oxyandra</i>	18, 20	Tanaka 1949	—	Japan
<i>reini</i>	26	" 1939b	—	"
<i>communis</i>	28	Wahl 1940	—	N. America
<i>ericetorum</i>	30	Heilborn 1939	—	Eur., Cauc., Sib.
<i>novae-angliae</i>	30	Wahl 1940	—	N. America
<i>umbellata</i>	30	" "	—	"
<i>panicca</i>	32	Heilborn 1939	—	Eur., Temp. Asia

CAREX (cont.)

<i>pilosa</i>	32, 57	Okuno 1940	—	Italy
<i>firma</i>	34	Reese 1953	—	Europe
<i>niigromarginata</i>	34	Wahl 1940	—	N. America
<i>conica</i>	34, 38, 42	Okuno 1940	—	Japan
<i>pennsylvanica</i>	36	Wahl 1940	—	N. America
<i>atrofusca</i>	36, 40	L. & L. 1948	—	North Reg.
<i>parciflora</i>	38, 39, 44	Tanaka 1949	—	Japan
<i>parallela</i>	44	L. & L. 1942	—	North Reg.
<i>davalliana</i>	46	Heilborn 1939	—	N. Temp.
<i>tomentosa</i>	48	" "	—	Europe
<i>bushii</i>	{ 48	Wahl 1940	—	N. America
	{ 52	Okuno 1940	—	
<i>capitata</i>	50	Heilborn 1939	—	Eur., N. Amer.
<i>gracillima</i>	50, 52, 54	Wahl 1940	—	N. America
<i>rariflora</i>	50, 54	L. & L. 1948	—	N. & Arctic
<i>canescens</i>	54, 56	" 1942	—	Temp.
<i>tenuiflora</i>	58, 62	" "	—	N. Temp.
<i>flava</i> s.l.	60, 68, 70	Davies 1955	—	Eur., Sib.
<i>scirpoidea</i>	{ 64	" 1948	—	
	{ 65	Heilborn 1939	—	" "
<i>leporina</i>	66, 68	L. & L. 1942	—	Eur., N. Amer.
<i>podogyna</i>	{ 68, 72	Tanaka 1941	—	Japan
	{ 76	Okuno 1940	—	
<i>rostrata</i>	{ 76	L. & L. 1944b	—	Eurasia
	{ 82	Wahl 1940	—	
<i>myabei</i>	90	Okuno 1940	—	Japan
<i>adelostoma</i>	106	L. & L. 1942	—	O.W. Arctic
<i>hirta</i>	112	Heilborn 1939	—	Eur., Temp. Asia
220 spp.	36-112	The same authors and:		

Böcher 1938a, Clausen *et al.* 1940, Ehrenberg 1945, Harling 1945, Levan & L. 1942, Reese 1952a, 1953, Tanaka 1939c, 1948, Wulff 1939a, Davies 1953b, 1955.

CYPERUS $x = 8, 9$

<i>alternifolius</i>	Umbrella Pl.	32	Tanaka 1937	HT	Madagascar
<i>hakonensis</i>		36	" "	T	Japan
<i>sanguinolentus</i>		48	" "	T	Tropics
<i>fuscus</i>		c. 72	L. & L. 1944b	—	Eur., As., N. Afr.
<i>papyrus</i>	Papyrus Gr.	c. 102	Tanaka 1937	HT	Trop. Africa
<i>esculentus</i>	Tiger Nut,	108?	Hicks 1929	BR	Cosmop.
<i>as rotunda</i>	Chufa	108	Tanaka 1937		

CLADIUM $x = 9$

<i>mariscus</i>	36	Pfeiffer 1942		Temp. & Sub-Tr.
-----------------	----	---------------	--	-----------------

SCIRPUS $x = ?$

<i>mucronatus</i>		42	Tanaka 1937	—	Cosmop.
<i>radicans</i>		58	Heilborn 1939	—	"
<i>sylvaticus</i>	Wood Club R.	64	Ehrenberg 1945	—	N. Temp.
		80	Rodrigues 1953		
<i>maritimus</i>		86	Blackburn, T. 1936	T	Cosmop.
		110	Tanaka 1937		

ISOLEPIS (SCIRPUS) $x = 14?$

<i>setacea</i>	28	Scheerer 1940	—	Cosmop.
----------------	----	---------------	---	---------

BLYSMUS (SCIRPUS) $x = 20, 22$					
<i>rufus</i>	40	Wulff 1937a	—	N. Eur., Sib.	
<i>compressus</i>	44	Håkansson 1928	—	Eur., Temp. Asia	
SCHOENOPLECTUS (SCIRPUS) $x = 20, 21$					
<i>triquetrus</i>	40	Tanaka 1949	—	Cosmop.	
<i>lacustris</i>	38, 40, 42	" 1938	—	"	
<i>tabernaemontani</i>	42	Wulff 1938	—	Eur., Temp. Asia	
<i>americanus</i>	c. 80	" 1937a	—	Amer., S.W. Eur., Australia	
TRICHOPHORUM (SCIRPUS) $x = 00$					
<i>alpinum (S. hudsonianus)</i>	58	Heilborn 1939	—	N. Temp.	
<i>caespitosum</i>	104	Scheerer 1940	—	Eur., N. Amer., Himalayas	
ELEOGITON (SCIRPUS) $x = 30$					
<i>fluitans</i>	60	Scheerer 1940	—	Cosmop.	
RHYNCHOSPORA $x = 13$, etc.					
<i>alba</i> White Beak Sedge	{ 26	Scheerer 1940	—	Eur., Siberia	
	42	L. & L. 1942	—		
<i>fusca</i> Brown B. S.	32	Scheerer 1940	—	Eur., Russia	
<i>japonica</i>	62	Tanaka 1941	—	Japan	
SCLERIA $x = 14$					
<i>tesselata</i>	28	Tanaka 1941	—	Tr. Asia & Austr.	
DULICHIMUM $x = 16$					
<i>arundinaceum</i>	32	Hicks 1929	—	N. America	
LIPOCARPHA $x = 23$					
<i>microcephala</i>	46	Tanaka 1937	—	E. Asia, Austr.	
ELYNA $x = 26$					
<i>myosuroides</i>	52-59	Heilborn 1939	—	Azores	
ERIOPHORUM $x = 29$, etc.					
<i>latifolium</i>	{ c. 54	Scheerer 1940	—	N. Temp. & Arc.	
	72	L. & L. 1948	—		
<i>brachyantherum</i>	58	" 1944b	—	N. Scand., N. Am.	
<i>russeolum</i>	c. 58	" 1948	—	N. Temp. & Arc.	
<i>scheuchzeri</i>	58	" "	—	" "	
<i>vaginatum</i> Hare's Tail	58	Tanaka 1949	H	N. Temp.	
<i>virginianum</i>	58?	Hicks 1929	—	N. America	
<i>angustifolium</i> Cotton Gr.	58, 60	L. & L. 1948	HT	N. Temp., Arctic	
(<i>polystachyum</i>)					
<i>gracile</i>	{ 60	Tanaka 1949	—	C. & N. Europe	
	76	Hagerup 1944	—		
KOBRESIA $x = 26, 36$					
<i>bellardii</i>	52	Bøcher 1938a	Fo	N. Temp.	
<i>simpliciuscula</i>	72	L. & L. 1948	—	N. Reg., Alpine	
SCHOENUS $x = 27, 38$					
<i>nigricans</i>	54	Rodrigues 1953	—	W. Eur., S. Afr., Amer.	
<i>ferrugineus</i>	76	L. & L. 1944b	—	Eur., Russia	
KYLLINGA $x = 60$					
<i>brevifolia</i>	120	Tanaka 1941	—	Trop. & Subtr.	

332 GRAMINEAE

Order of the Tribes with their Basic Numbers

I	Maydeae: 5, 9 (10)	XIII	Lygeae: 20
II	Andropogoneae: 5, 9 (10), 11, 12, 14, 17, 19	XIV	Agrosteae: 5, 7
III	Panicaceae: 7, 9, 10, 12, 15, 17, 19	XV	Phalarideae: 5, 6, 7
IV	Arundinellae: 9, 10, 12, 14	XVI	Festuceae: 5, 6, 7, 8, 9, 11, 13
V	Eragrostae: 8, 9, 10, 12	XVII	Aveneae: 4, 6, 7, 9, 13
VI	Sporoboleae: 8, 9, 10, 12, 14	XVIII	Hordeae: 7
VII	Zoisieae: 9, 10	XIX	Stipeae: 4, 9, 10, 11, 12, 14, 17, 19, 23
VIII	Chlorideae: 7, 9, 10	XX	Oryzeae: 12, 15
IX	Pappophoreae: 9, 10	XXI	Arundineae: 12
X	Aristideae: 11, 12, 19	XXII	Centothecae: 12
XI	Leptureae: 7, 9, 13	XXIII	Bambuseae: 12 (no 2x)
XII	Nardeae: 13		

TRIBE I: MAYDEAE

COIX $x = 5$

<i>aquatica</i>	Bead Coix	10	Mangelsdorf & R. 1939, E.K.J.*	FoTo	Trop. Asia
<i>lacryma-jobi</i>	Job's Tears	20	Mangelsdorf & R. '39		<i>cult</i> , Malaya
v. "adlai"	Adlay	20	E.K.J.*	FoGH	
v. <i>mayuen</i> , v. <i>stenocarpa</i>		20	Mangelsdorf & R. '39	FoGTo	
<i>gigantea</i>	Giant Coix	20, 40	E.K.J.*	FoTo	Trop. Asia

CHIONACHNE (POLYTOCA) $x = (5) 10$

<i>koenigii</i>		20	E.K.J.*	Fo	Trop. Asia
as <i>barbata</i>		20	Mangelsdorf & R. '39		
<i>semiteres</i>		20	E.K.J.*	Fo	"

SCLERACHNE $x = (5) 10$

<i>punctata</i>		20	Mangelsdorf & R. '39	Fo	Java
-----------------	--	----	----------------------	----	------

POLYTOCA $x = (5) 10$

<i>macrophylla</i>		{ 40	Avdulov 1931	Fo	New Guinea, etc.
		40	Simmonds 1954		

EUCHLAENA $x = (5) 10$

<i>mexicana</i>	Teosinte	20	Mangelsdorf & R. '39	FoG	Mexico
<i>perennis</i>	Perennial T.	40	" "	Fo	"

ZEA $x = (5) 10$

<i>mays</i>	Maize	20 + 1-7B	Randolph 1928	GFOOV	Mexico, <i>cult</i>
	Indian Corn	20 + 1-7B	Darlington & U. '41		
		(10, 40, 80)	cf. Rhoades 1950		
		(30)	Randolph 1932		
			Beadle 1930		

TRIPSACUM $x = (9) 18$

<i>australe</i>		36	Simmonds 1954	Fo	S. America
<i>floridanum</i>	Florida Gama	36	Longley 1937	Fo	Florida
<i>dactyloides</i>	Eastern G.	36, 72	Mangelsdorf & R. '39	Fo(G)	Tr. & Sub-Tr. Am.
<i>latifolium</i>		72	" "	Fo	C. America

TRIPSACUM (cont.)

<i>laxum</i>		72	Mangelsdorf & R. '39	Fo	C. America
<i>pilosum</i>	Guatemala G.	72	" "	Fo	"

TRIBE II: ANDROPOGONEAE

SORGHUM $x = 5$

<i>brevicallosum</i>		10	Garber 1950	—	N. Australia
<i>intrans</i>		10	" "	—	" "
<i>matarankense</i>		10	Garber & S. 1951	—	" "
<i>purpureo-sericeum</i>		10 + 1-6B	{ Janaki Ammal 1940b, Darlington & T. 1941	Fo	Trop. Africa
spp. <i>deccanense</i>		10	Garber 1950	Fo	W. India
<i>dimidiatum</i>		10	" "	Fo	Sudan
<i>stipoides</i>		10	" "	—	N. Australia
<i>versicolor</i>		10	" "	Fo	E. Trop. Africa
<i>arundinaceum</i>	Kamerun G.	20	Longley 1932	Fo	Trop. Africa
<i>australiense</i>		20	Garber & S. 1951	—	N. Australia
<i>cernuum</i>	White Durra	20	Huskins & S. 1934	FoG	cult
<i>dochna</i>	Sorgo, Sugar S.	20	" "	GSu	"
<i>drummondii</i>	Chicken-Corn	20	Karper & C. 1936	Fo	"
<i>durra</i>	Cholam	20	Huskins & S. 1932	GFo	"
<i>effusum</i>	Kamerun G.	20	Karper & C. 1936	Fo	Trop. Africa
<i>hewsonii</i>		20	" "	Fo	Sudan
<i>leiocladum</i>		20	Garber 1954	—	S.E. Asia, N. Aus.
<i>margaritifera</i>	Guinea Corn	20	Huskins & S. 1934	FoG	cult
<i>melaleucum</i>	Shelsheleh	20	" "	FoG	Sudan, cult
<i>nitidum</i>		20	Garber 1950	—	E. Australia
<i>plumosum</i>		20 (30)	" 1954	—	N. Australia
<i>roxburghii</i>	Shallu	20	E.K.J.*	FoG	cult
<i>stapfii</i>		20	Krishnaswamy & A. 1940	Fo	India
<i>subglabrescens</i>	Milo	20	Huskins & S. 1934	FoG	cult
<i>sudanense</i>	Sudan Grass	{ 20 (40)	" "	Fo	N. Africa
<i>verticilliflorum</i>	Wild S. Tabuki	20 + 1B	Huskins & S. 1934	Fo	Trop. Africa
<i>virgatum</i>	Tunis Grass	20	" "	Fo	N. Africa
<i>vulgare</i>	Great Millet	20	Kuwada 1915	FoGSu	cult, Abyssinia
<i>halepense</i>	Johnson Gr.	{ 20, 40 40	{ E.K.J.* Huskins & S. 1934	Fo	Trop. Asia, Medit.
<i>almum</i>		40	Saez & N. 1943	Fo	Argentina
<i>laxiflorum</i>		40	Garber 1950	—	N. Australia
<i>macrosporum</i>		40	" "	—	" "
<i>friesii</i>		40	Moffett & H. 1949	—	Trop. Africa
<i>rigidifolium</i>		60	Garber 1950	—	E. Trop. Africa

HYPARRHENIA $x = 10, 15$

<i>aucta</i>		20	Krupko 1953	Fo	S. Africa
<i>edulis</i>		20	Brown 1953	Fo	Sudan
<i>hirta</i>	30, 44 (3x-1)		Krupko 1953	Fo	Trop. Africa
<i>dissoluta</i>		40	Moffett & H. 1949	FoT	Trop. & Sub-Tr.
<i>newtonii</i>		40	" "	Fo	Angola

SORGHASTRUM $x = 10$						
<i>elliottii</i>	20	Garber 1950	—		S.E. U.S.A.	
<i>pellitum</i>	20	Saura 1948a	—		S. America	
<i>secundum</i>	20	Garber 1950	—		S.E. U.S.A.	
<i>nutans</i>	Indian Grass	{ 20 Saura 1948a	Fo		E. & C. U.S.A.,	
		40 Brown 1950			Mexico	
CAPILLIPEDIUM (ANDROPOGON) $x = (5) 10$						
<i>parviflorum</i>	Scented Golden- 20	Church 1940	Fo		O.W. Tropics	
	(as <i>A. micranthus</i>) beard					
DIECTOMIS $x = (5) 10$						
<i>fastigiata</i>	20	Moffett & H. 1949	Fo		Tropics	
ELYONURUS $x = (5) 10$						
<i>barbiculmis</i>	20	Brown 1951	Fo		Tex., Ariz., Mex.	
<i>tripsacoides</i>	20	" "	Fo		S: U.S.A.—Arg.	
MONOCYMBIUM $x = (5) 10$						
<i>ceresiiforme</i>	20	Moffett & H. 1949	FoT		Trop. Africa	
POGONATHERUM $x = (5) 10$						
<i>paniceum</i>	20	E.K.J.*	H		Trop. Asia	
TRACHYPOGON $x = (5) 10$						
<i>montufari</i>	Crinkle-Awn 20	Brown 1951	—		S.W. U.S.A.—Arg.	
<i>capensis</i>	40	de Wet 1954b	FoT		S. Africa	
VETIVERIA $x = (5) 10$						
<i>lawsoni</i>	20	E.K.J.*	T		India	
<i>zizanioides</i>	Kus Kus Grass 20	"	FoHPT		Trop. Asia	
AMPHILOPHIS (ANDROPOGON) $x = (5) 10$						
<i>foulkesii</i>	20	Ramanathan 1950	—		India	
<i>pertusa</i>	40	Sampath & R. 1949	—		O.W. Tropics	
APLUDA $x = (5) 10$						
<i>mutica</i>	{ 20 Hunter 1934		Fo		Trop. Asia	
	40 Avdulov 1928					
CHRYSOPOGON (ANDROPOGON) $x = (5) 10$						
<i>aciculatus</i>	Love G. 20	E.K.J.*	FoH		Trop. Asia	
<i>montanus</i>	20	"	Fo		" "	
<i>zeylanicus</i>	20	"	T		India	
<i>gryllus</i>	40	Avdulov 1931	Fo		Medit.	
SCHIZACHYRIUM $x = (5) 10$						
<i>glabrescens</i>	20	Moffett & H. 1949	—		Angola	
<i>jeffreysii</i>	40	" "	—		Trop. Africa	
<i>semiberbe</i>	{ 30 de Wet 1954b				Tr. Afr. & Amer.	
	50 Krupko 1953					
CYMBOPOGON $x = (5) 10$						
<i>excavatus</i>	Turpentine G. 20	de Wet 1954b	—		O.W. Tr. & Subtr.	
<i>validus</i>	20	" "	—		S. Africa	
<i>caesius</i>	{ 20 E.K.J.*		P		India	
	22 Babu 1936					
<i>goeringii</i>	20	Moriya & K. 1949a	—		Tropics	

CYMBOPOGON (cont.)

<i>nardus</i>	Citronella G.	20	Kuwada 1919	HMPSp	Trop. Asia
<i>polyneurus</i>	Camphor G.	20	Babu 1936	P	India
<i>flexuosus</i>	Malabar L.G.	20, 40	" "	MP	"
<i>coloratus</i>	Myet-Sat	40	" "	P	Burma
<i>martinii</i>	Palmarosa, Ginger G.	40	" "	P	India
<i>citratius</i>	Lemon G.	40, 60	" "	HMP	Trop. Asia
<i>plurinodes</i>		40	de Wet 1954b	Fo	S. Africa

THEMEDA $x = (5) 10$

<i>arguens</i>		20	Avdulov 1928	Fo	Malaya—Austr.
<i>triandra (forskalii)</i>	Rooi G.	60	" 1931	Fo	Africa
<i>japonica</i>		80	Tateoka 1954	Fo	Japan

ANDROPOGON $x = (5) 10$

<i>agrostoides</i>		20	Saura 1948a	—	Argentine
<i>cirratus</i>	Texas Beard G.	20	Brown 1950	Fo	S.W: U.S.A., Mexico
<i>elliottii</i>		20	Hunter 1934	Fo	E: N. America
<i>eucomus</i>		20	Moffett & H. 1949	—	Tr. & S. Africa
<i>glomeratus</i>		20	Brown 1950	—	S: U.S.A., C. Am.
<i>micranthus</i>		20	Church 1940	—	Trop. Asia, Austr.
<i>monticola</i>		20	Krishnaswamy 1940	—	India
<i>paniculatus</i>		20	Saura 1948a	—	Trop. & Subtrop.
<i>pumilus</i>		20	Krishnaswamy 1940	—	India
<i>virginicus</i>	Broom Sedge	20	Church 1936	Fo	E: U.S.A., C. Am.
<i>amplectens</i>		40	Moffett & H. 1949	Fo	S. Africa
<i>annulatus</i>	Angleton G.	40	Warmke <i>et al.</i> 1946	Fo	N. Afr., India, Australia
<i>distachyum</i>		40	Saura 1943	Fo	Medit.
<i>gayanus</i>	Gamba	40	Moffett & H. 1949	FoT	Trop. Africa
<i>schinzii</i>		40	" "	—	" "
<i>schirensis</i>		{ 20	de Wet 1954b	Fo	Abyssinia
		{ 40	Moffett & H. 1949		
<i>scoparius</i>	Prairie Beard G.	40	Hunter 1934	Fo	U.S.A.
<i>ischaemum</i>		40	Brown 1950	—	Temp. & Tr. O.W.
<i>provincialis</i>		40, 60	Church 1940	Fo	U.S.A.
<i>foveolatus</i>		45	Krishnaswamy 1940	—	Tr. Afr. & Asia
<i>caricosus</i>		50	" "	—	Tr. Asia, Masc. Is.
<i>edwardsianus</i>		60	Gould 1953	Fo	Tex., Arg., Parag.
<i>exaristatus</i>		60	" "	Fo	S: U.S.A.
<i>ternarius</i>		60	Church 1940	Fo	" "
<i>furcatus</i>	Blue Joint T.F.	{ 60	Nielsen 1939	Fo	N. America
		{ 70	Church 1929b		
<i>hallii</i>	Turkey	{ 60, 70	Nielsen 1939	Fo	C: U.S.A.
	Foot	{ 60, 100	Brown 1950		
<i>perforatus</i>		120	Gould 1953	Fo	Texas, Mexico
<i>barbinodis</i>		180	" "	Fo	S: U.S.A.—Arg.

HETEROPOGON $x = 10, 11$

<i>contortus</i>	Tangle-head, Spear Grass	{ 20	E.K.J.*		
		{ 60	Brown '51, de Wet '54b	FoT	Cosmop.
		{ 44	Moffett & H. 1949		
<i>melanocarpus</i>		22	" "	—	Tropics

HEMARTHRIA $x = 10$					
<i>altissima</i>	20	de Wet 1954b	—		Tropics
MICROSTEGIUM $x = 10$					
<i>japonicum</i>	20	Tateoka 1954	—		India, Japan
<i>vimineum</i> v. <i>polystachyum</i>	40	Ono & T. 1953	—		" "
ECCOILUPUS $x = 10$					
<i>cotulifer</i>	40	Ono & T. 1953	—		Japan
EUCLASTA (ANDROPOGON) $x = 10$					
<i>condylotricha (piptatherus)</i>	40	Avdulov 1931	Fo		Tr. Afr. & Amer.
DICHANTHIUM $x = 10$					
<i>aristatum</i>	20	de Wet 1954b	Fo		O.W. Tropics
<i>annulatum</i>	Marvel G.	{ 40 Karper & C. 1936	Fo		N. & Trop. Afr.,
		40 E.K.J.*			Trop. Asia
<i>nodosum</i>	40	Oke 1950	—		Trop. Asia
<i>caricosum</i>	40	" "	Fo		" "
EREMOPOGON (ANDROPOGON) $x = 10$					
<i>foveolatus</i>	{ 40	Sampath & R. 1949,	Fo		N. Afr., Tr. Asia
	40	E.K.J.*			
BOTHRIOCHLOA (ANDROPOGON) $x = 10$					
<i>glabra</i>	40	de Wet 1954b	Fo		O.W. Tropics
<i>insculpta</i>	60	" "	Fo		" "
<i>intermedia</i>	40, 60	Oke 1950	Fo		Tr. Asia & Austr.
<i>saccharoides</i>	Silver Beard 60, 120	Gould 1953	Fo		S: U.S.A.—Arg.
	G.				
ISCHAEMUM (ANDROPOGON) $x = 10$					
<i>arcuatum</i>	20	de Wet 1954b	Fo		S. Africa
<i>guianense</i>	40	Krishnaswamy 1940	Fo		Trop. America
<i>crassipes</i>	56	Moriya & K. 1949a	Fo		China, Japan
<i>anthephoroides</i>	68	Kuwada 1919	Fo		Japan
IMPERATA $x = (5) 10$					
<i>cylindrica</i>	Alang Alang 20	Janaki Ammal 1941	FoT		Tr. & Subtr. O.W.
as <i>arundinacea</i>	Blady G. 20	Bremer 1924			
ERIANTHUS (SACCHARUM) $x = (5) 10$					
<i>ravennae</i>	Plume G. 20 + 0-1B	Janaki Ammal 1941	HT		Medit., S.W. Asia
<i>pollinioides</i>	30	Li & M. 1951a	—		China
<i>strictus</i>	30	Brown 1951	—		S.E: U.S.A.
<i>elegans</i>	40	Bremer 1924	T		India
<i>arundinaceus</i>	{ 40, 60	" 1934	HT		India, China
	40	Janaki Ammal 1941			
<i>formosanus</i>	60	Li & M. 1951a	—		Formosa
<i>sara (bengalense)</i>	60	Rümke 1934	T		India, Afghan.
NARENGA (SACCHARUM) $x = 5$					
<i>porphyrocoma</i>	30	Janaki Ammal 1941	T		India, Malaya
as <i>S. narenga</i>	30	Bremer 1924			
SACCHARUM $x = 10, 12$					
<i>arundinaceum</i>	{ 40	E.K.J.*	T		India, China
	40, 60	Bremer 1934			

SACCHARUM (cont.)

<i>spontaneum</i>	Kans G.	54-128 48-80 96, 112 48-128	Singh 1934 Janaki Ammal 1936 Bremer 1936 Moriya 1941	T	Polynesia— Turkestan
<i>officinarum</i>	Sugar Cane	80	Janaki Ammal 1941		
Cult vars. (<i>off.</i> × <i>spont.</i> , etc.)		80-156 70-173 80-136	Bremer 1923 Li & M. 1951a Li & L. 1948	Su	cult, E. Indies
<i>robustum</i>		42 60-144	Weller 1939	Su	Mal. & Polyn.
<i>barberi</i>		82-124	Bremer 1931	Su	cult, India
<i>sinense</i>		118-120 117, 123	Li & M. 1951a	Su	cult, China

SCLEROSTACHYA $x = 12$

<i>fusca</i>	Yekkda	48, 96	Janaki Ammal 1940a	T	India, Burma
--------------	--------	--------	--------------------	---	--------------

MISCANTHUS $x = 14, 19$

<i>sinensis</i>		28 38 38 40	Moriya & K. 1949b Leung & L. 1949 Takizawa 1952 Tateoka 1954	—	China, Japan
<i>japonicus</i>	{ 38 + 3B,	38 57 36	Leung & L. 1949 Li & M. 1951b Avdulov 1931	HT	E. Asia, Polyn.
<i>transmorrosinensis</i>		38	Leung & L. 1949	—	Formosa
<i>formosanus</i>		38	" "	—	"
<i>chinensis</i>		42	Church 1929b	HT	E. Asia
<i>saccharifera</i>		64	Hunter 1934	H	"
<i>sacchariflorus</i>		76	Takizawa 1952	—	E. Asia
<i>tinctorius</i>		76, 114	" "	—	Japan

EREMOCHLOA $x = 9$

<i>ophiuroides</i>	Centipede G.	18	Brown 1950	H	S.E. Asia
--------------------	--------------	----	------------	---	-----------

ARTHAXON $x = 9$

<i>langsдорffi</i> (<i>ciliaris</i>)		36	Avdulov 1931	Fo	O.W. Tropics
<i>hispidus</i>		36	Tateoka 1954	Fo	Japan

CLEISTACHNE $x = 9$

<i>sorghoides</i>		36	Garber 1950	—	E. Trop. Afr., Ind.
-------------------	--	----	-------------	---	---------------------

ISEILEMA $x = 9$

<i>laxum</i>		36	Ramanathan 1950	—	India, Ceylon
--------------	--	----	-----------------	---	---------------

COELORRACHIS (ROTTBOELLIA) $x = 9$

<i>glandulosa</i>		54	Avdulov 1931	Fo	Trop. Asia
-------------------	--	----	--------------	----	------------

ROTTBOELLIA (MANISURIS) $x = 9, 10$

<i>cylindrica</i>		18	Mangelsdorf & R. '39	Fo	N. America
<i>japonica</i>		18	Moriya & K. 1949a	—	Japan
<i>exaltata</i>		{ 20 36	Moffett & H. 1949 Krishnaswamy <i>et al.</i> 1954	FoT	Trop. Afr. & Asia

SEHIMA $x = 17$

<i>nervosum</i>		34	Sampath & R. 1949	—	O.W. Tropics
-----------------	--	----	-------------------	---	--------------

TRIBE III: PANICEAE

PENNISETUM (PENICILLARIA) $x = 7, 9$

$x = 7$

<i>spicatum</i>	Pearl Millet	14	Avdulov 1931	Fo	Tropics
<i>typhoideum</i>	Spiked	14-17	Li & Li 1943	FoG	Trop. Afr., Asia
(<i>glaucum</i>)	Millet	14 (21)	Krishnaswamy & A. '41		
<i>purpureum</i>	Dry Napier	28	Simmonds 1954	FoT	Trop. Africa
	Grass	27	Parodi 1946		
		28, 56	Krishnaswamy & R. '48b		

$x = 9$

<i>alopecuroides</i>		18	Ono & T. 1953	H	China
<i>alopecurus</i>		18	Hrishi 1952	—	India
<i>hohenackeri</i>		18	" " E.K.J.*	Fo	"
<i>setaceum</i> (3x)	Fountain Grass	27	" "	FoH	N. Afr., S.W. Asia
<i>clandestinum</i>	Kikuyu G.	36	" "	Fo	E. Africa
<i>latifolium</i>		36	Parodi 1946	—	Argentina
<i>nervosum</i>		36	" "	Fo	Ecuador—Argent.
<i>subangustum</i>		36	Krishnaswamy <i>et al.</i> 1954	Fo	India
<i>orientale</i>		36	Hrishi 1952	Fo	N. Afr.—India
v. <i>triflorum</i>		45	Krishnaswamy 1940		India
<i>villosum</i>	Feathertop	45	" "	FoH	N.E. Trop. Afr.
<i>polystachyon</i>	Mission G.	54	Krishnaswamy & R. 1949	Fo	India
<i>frutescens</i>		63	Parodi 1946	—	Argentina
<i>macrourum</i>		45	Avdulov 1931	Fo	S. Africa
<i>setosum</i>		54	" "	Fo	Trop. America

PANICUM * $x = 7, 9, 10$

$x = 7$

<i>reptans</i>		14	Brown 1950	Fo	Tropics
----------------	--	----	------------	----	---------

$x = 9$

<i>antidotale</i>	& 2 spp.	18	Burton 1942	Fo	Trop. Asia
<i>capillare</i>	Witchgrass	18	Avdulov 1928	Fo	N. America
<i>lanuginosum</i>		18	Brown 1948	Fo	S.E: U.S.A., W.I.
<i>scribnerianum</i>	& 50 spp.	18	" " 1951	Fo	N. America
<i>tuberculatum</i>	& 1 sp.	18	Krishnaswamy 1940	Fo	Trop. Asia
<i>anceps</i>		18	Brown 1948	Fo	N. America
		36	Burton 1942		
<i>boscii</i>		18, 36	Brown 1948	Fo	E: U.S.A.
<i>virgatum</i>	Switch Grass	18, 36, 54, 72, 90, 108	Nielsen 1944	Fo	N. & C. Ame.
		21-36	Brown 1948		
<i>amarum</i>		36	" "	Fo	E: U.S.A., W.I.
<i>bisulcatum</i> (<i>acroanthum</i>)		36	Avdulov 1931	Fo	E. Asia
		54	de Wet 1954b		
<i>deustum</i>		36	" "	Fo	S. Africa
<i>fasciculatum</i>	Browntop Millet	36	Burton 1942	Fo	Trop. America
<i>purpurascens</i>	Para Grass	36	" "	Fo	Tro. Afr. (Amer.)
<i>milliaceum</i>	Indian Millet	36	Avdulov 1931	G	cult, India
	Proso M.	(72)	Arenkova 1940	Fo	
<i>milliare</i>	Little M.	36	Rau 1929a	FoG	Trop. Asia
<i>urvilleanum</i>	& 7 spp.	36	Parodi 1946	Fo	Cal., Arg., Chile
<i>verrucosum</i>	& 3 spp.	36	Brown 1948	Fo	E: U.S.A.
<i>texanum</i>	Texas M.	36	" 1950	Fo	Temp. America
		54	Burton 1942		

PANICUM (cont.)

<i>maximum</i>	Guinea Grass	{ 18 36 32, 48	de Wet 1954b E.K.J.* Warmke 1951	FoT	Trop. Africa
<i>esculentum</i>		54, 58	Krishnaswamy 1940	Fo	Japan (<i>cult</i>)
<i>fulum</i>		54	Parodi 1946	—	S. America
<i>jubiflorum</i>		54	Burton 1942	—	Australia
<i>psilopodium</i>		54	Ramanathan 1950	—	India
<i>plenum</i>		54	Brown 1951	—	Tex., Ariz., Mex.
<i>bulbosum</i>		{ 54, 72 70	" " " Krishnaswamy 1940	Fo	" "
<i>x</i> = 10					
<i>hians</i>		20	Brown 1951	Fo	S: U.S.A.
<i>millioides</i>		20	Parodi 1946	—	N. America
<i>prionitis</i>		20	" "	—	Brazil
<i>elephantipes</i>		30	Covas 1949b	—	" "
<i>obtusum</i>	Vine-Mesquite	20, 40	Brown 1951	Fo	S: U.S.A., Mex.
<i>geminatum</i>		40	" "	—	Trop., Sub-trop.
<i>laxum</i>	Woodland G.	40	Warmke <i>et al.</i> 1946	Fo	Trop. America
<i>repens</i>		40	Krishnaswamy 1940	FoSb	Sub-tropics
<i>teneriffae</i>		40	" "	—	Medit., S.W. Asia
"makarikari"		44	Moffett & H. 1949	Fo	S. Africa
<i>altissimum</i>		60	Krishnaswamy 1940	—	Guiana

UROCHLOA *x* = 7, 9, 15

<i>trichopus</i>		14	P. T. Thomas unp.	FoG	Sudan
<i>pullularis</i>		28	Moffett & H. 1949	—	E. Trop. Africa
<i>mosambicensis</i>		42	" "	—	Mozambique
<i>bolbodes</i>		{ 36 30 30	" " de Wet 1954b " "	— Fo Fo	Abyssinia O.W. Tropics S. Africa

BRACHIARIA *x* = 7, 9

<i>marlothii</i>		14	P. T. Thomas unp.	—	S. Africa
<i>comata</i>		28	" "	—	Abyssinia
<i>eruciformis</i>		18	Avdulov 1931, E.K.J.*	Fo	Tr. Afr. & Asia
<i>ciliatissima</i>		36	Brown 1951	Fo	Ark., Texas
<i>decumbens</i>		36	Zerpa 1952	Fo	Trop. America
<i>distachya</i>		36	Krishnaswamy 1940	Fo	Trop. Asia, Austr.
<i>extensa</i>		{ 36 18 36	Parodi 1946 de Wet 1954b Moffett & H. 1949	— — —	S.E: U.S.A., W.I. S. Africa
<i>nigropedata</i>		36	E.K.J.*	Fo	Trop. Asia
<i>paspaloides</i>		36	Moffett & H. 1949	Fo	S. Africa
<i>serrata</i>		36	" "	—	E. & C. Trop. Afr.
<i>viridula</i>		42	" "	—	Trop. Africa
<i>dictyoneura</i>		54	" "	FoH	Trop. & S. Africa
<i>brizantha</i>	Large-seeded P.				

AMPHICARPUM *x* = 9

<i>purshii</i>		18	Brown 1948	—	E: U.S.A.
----------------	--	----	------------	---	-----------

ANTHEPHORA *x* = 9

<i>hermaphroditica</i>		18	Avdulov 1928	Fo	Trop. America
<i>as elegans</i>		18	Mimeur 1950		

SPINIFEX $x = 9$					
<i>littoreus</i>		18	E.K.J.*	Sb	India—Malaya
SETARIA $x = 9, 19$					
<i>flabellata</i>		18	de Wet 1954b	—	S. Africa
<i>italica</i>	Italian Millet	18	Avdulov 1928	G	<i>cult</i> , China
<i>longisetata</i>		18	Moffett & H. 1949	Fo	Trop. Africa
<i>viridis</i>	Green Bristle G.	18	Tateoka 1954	Fo	Cosmop.
<i>pallidifusca</i>	Kavatta G.	18	Krishnaswamy & A. 1935b	FoG	O.W. Tropics
<i>(glauca)</i>		36	Moffett & H. 1949		
<i>verticillata</i>	Bur B. G.	18	de Wet 1954b		
		36	Avdulov 1931	FoG	Cosmop.
<i>faberi</i>		36	Kishimoto 1938	—	China
<i>intermedia</i>		36	Krishnaswamy & R. 1949	—	Cosmop.
<i>magna</i>	Giant B. G.	36	Brown 1948	Fo	E: U.S.A., W.I.
<i>phragmitoides</i>		36	Moffett & H. 1949	—	Trop. & S. Africa
<i>plicata</i>		36	Avdulov 1928	Fo	Trop. Asia
<i>glauca</i>	Yellow B. G.	36	" 1931	Fo	Eur., Temp. Asia
<i>(lutescens)</i>		72	Brown 1948		
<i>sphacelata</i>	Rhodesian Tim.	36, 54	Moffett & H. 1949	Fo	Trop. Africa
<i>chevalieri</i>	Buffel Grass	54	" "	FoT	" "
<i>palmifolia</i>		54	Krishnaswamy <i>et al.</i> 1954	H	India
<i>splendida</i>		63	Moffett & H. 1949	Fo	Trop. & S.E. Afr.
<i>geniculata</i>		72	Brown 1948	—	America
<i>macrostachya</i>		72	" 1950	—	S.W: U.S.A., Mex.
<i>chondrachne</i>		38	Ono & T. 1953	—	Tropics
TRICHACHNE (PANICUM) $x = 9$					
<i>californica</i>	Cottontop	18	Krishnaswamy 1940	Fo	S.W: U.S.A., Mex.
		36	Brown 1951		
<i>insularis</i>	Sourgrass	36	" "	—	S: U.S.A.—Arg.
<i>patens</i>		72	" "	—	Texas
ACRO CERAS $x = 9$					
<i>macrum</i>		36	Moffett & H. 1949	—	Trop. & S. Afr.
ALLOTEROPSIS $x = 9$					
<i>semialata</i>		54	Moffett & H. 1949	—	O.W. Tropics
CHLORIDION $x = 9$					
<i>cameronii</i>		54	Moffett & H. 1949	—	Trop. Africa
ECHINOCHLOA $x = 9$					
<i>cruspavonis</i>		36	Parodi 1946	Fo	Trop. & Sub-tr.
		36	Brown 1948		
<i>crusgalli</i>	Cockspur G.	42	Church 1929b	FoG	N. Temp.
		48	Rau 1929		
		54	Tateoka 1954		
		36	Brown 1950		
<i>colona</i>	Jungle Rice	48	Krishnaswamy & R. 1949	FoG	Trop. & Sub-tr.
		54	de Wet 1954b		
		72	E.K.J.*		

ECHINOCHLOA (cont.)

<i>frumentacea</i>	Jap. Barny. M.	{ 36 Hunter 1934 56 Church 1929b	FoG	Trop. Asia
<i>stagnina</i>		54 Krishnaswamy & R. 1949	AFoG SuT	Tr. Afr. & Asia
<i>pyramidalis</i>	Antelope G.	72 Parodi 1946	FoGT	„ „

ERIOCHLOA $x = 9$

<i>contracta</i>	Prairie Cupgrass	36 Brown 1950	Fo	S: U.S.A.
<i>montevideensis</i>		36 Parodi 1946	—	Argentine
<i>sericea</i>		54 Brown 1951	Fo	Tex., Oklah.
<i>villosa</i>		54 Tateoka 1954	Fo	E. Asia

LASIACIS $x = 9$

<i>divaricata</i>	Tibisee	36 Parodi 1946	Fo	Trop. America
-------------------	---------	----------------	----	---------------

LEPTOLOMA $x = 9$

<i>cognatum</i>		36, 72 Brown 1951	Fo	E. & S: U.S.A.
-----------------	--	-------------------	----	----------------

MELINIS $x = 9$

<i>minutiflora</i>	Molasses G., Efatakala G.	36 Avdulov 1931	Fo	Tr. Afr. & Amer.
<i>macrochaeta</i>		36 Moffett & H. 1949	—	Trop. Africa

PASPALIDIUM (PANICUM) $x = 9$

<i>paludivagum</i>		36 Burton 1942	Fo	E: U.S.A.
<i>jubiflorum</i>		54 „ „	Fo	Australia

OPLISMENUS $x = 9$

<i>undulatifolius</i>		54 Avdulov 1931	—	S. Eur.—E. Asia
<i>compositus</i>	Basket Grass	72 „ „	H	Tropics
<i>as burmannii</i>		72 „ „	—	S.E: U.S.A., Tr.
<i>setarius</i>		c. 72 Brown 1948	—	America

TRICHOLAENA $x = 9$

<i>monachne</i>		36 de Wet 1954b	Fo	S. Africa
-----------------	--	-----------------	----	-----------

RHYNCHELYTRUM (TRICHOLAENA) $x = 9$

<i>minutiflorum</i>		36 Moffett & H. 1949	—	Trop. Africa
<i>nyassanum</i>		36 „ „	—	Nyasaland
<i>repens (rosea)</i>	Natal Grass	36 de Wet 1954b	FoH	Trop. Africa
<i>setifolium</i>		36 Moffett & H. 1949	—	S. Africa

SACCIOLEPIS $x = 9$

<i>angusta</i>		18 Tateoka 1954	—	O.W. Tropics
<i>glaucescens</i>		36 Moffett & H. 1949	—	Mashonaland
<i>striata</i>		36 Brown 1948	—	E: U.S.A., W.I.

STENOTAPHRUM $x = 9$

<i>secundatum</i>	St. Augustine G.	{ 18 Brown 1950, 18 Warmke <i>et al.</i> 1946 20! Brown 1948	H	S.E: U.S.A.
-------------------	------------------	--	---	-------------

DIGITARIA (PANICUM) $x = 9, 15, 17$

<i>brazzae</i>		18 Moffett & H. 1949	—	Trop. Africa
<i>chinensis</i>		18 Ono & T. 1953	—	China
<i>didactyla</i>	Blue Couch	18 E.K.J.*	Fo	Mauritius, Austr.

DIGITARIA (cont.)

<i>eriantha</i>	Woolly Finger-G.	{ 18	Moffett & H. 1949	Fo	S. Africa
		40	de Wet 1954b	—	
<i>gazensis</i>		18	Moffett & H. 1949	—	Gazaland
<i>milanjiana</i>		18	" "	—	Trop. Africa
<i>smutsii</i>		18	Ramanathan 1950	—	Transvaal
<i>swazilandensis</i>		18	Moffett & H. 1949	—	Swaziland
<i>filiformis</i>		36	Brown 1948	Fo	E: U.S.A.
<i>horizontalis</i>		{ 36	Avdulov 1928	Fo	Tropics
		30	P. T. Thomas unp.	—	
<i>ischaemum</i>	Smooth Crabgr.	36	Brown 1948	Fo	Eurasia
		34	P. T. Thomas unp.	—	
<i>sanguinalis</i>	Crabgrass	{ 36-48	Brown 1948	FoG	Sub-tropics
		54	Covas & S. 1947	—	
<i>pentzii</i>		{ 36	Burton 1942	Fo	S. Africa
		54	Moffett & H. 1949	—	
<i>adusta</i>		72	Parodi 1946	—	Brazil
<i>marginata</i>		72	Ramanathan 1950	Fo	Tr. Asia & Afr.
<i>timorensis</i>		72	E.K.J.*	Fo	Trop. Asia
<i>exilis</i>	Fundi	54	Hunter 1934	FoG	W. Africa
<i>valida</i>		30	de Wet 1954b	Fo	S. Africa
<i>decumbens</i>		30	Burton 1942	Fo	"
<i>polevansii</i>		34	" "	Fo	"
<i>longiflora</i>		34	P. T. Thomas unp.	—	Trop. Africa

CENCHRUS $x = 9, 17$

<i>ciliaris</i>	(Apo.)	{ 34	E.K.J.*	Fo	Trop. & S. Africa
		36	Moffett & H. 1949	—	India
		32, 36, 40, 54	Fisher <i>et al.</i> 1954	—	
<i>pauciflorus</i>	Field Sandbur	36	Brown 1948	Fo	America
<i>myosuroides</i>		{ 54	" 1950	SbFo	Trop. America
		70	Avdulov 1931	—	
<i>brownii</i> (<i>inflexus</i>)		34	" "	Fo	Austr., Tr. Amer.
<i>echinatus</i>	Hedgehog G.	34	" "	Fo	Trop. America
<i>setigerus</i> (Apo.)	Anjan G.	{ 34	E.K.J.*	Fo	N.E. Tr. Afr.—
		36	Fisher <i>et al.</i> 1954	—	India
<i>tribuloides</i>	Dune Sandbur	34	Brown 1948	Sb	E: N. & Tr. Am.

OPLISMENOPSIS $x = 10$

<i>najada</i>		20	Parodi 1946	—	Uruguay
---------------	--	----	-------------	---	---------

LEPTOCORYPHIUM $x = 10$

<i>lanatum</i>		40	Parodi 1946	—	Mexico
----------------	--	----	-------------	---	--------

AXONOPUS $x = 10$

<i>iridaceus</i>		20	Parodi 1946	—	S. America
<i>furcatus</i>		40	Brown 1950	Fo	E: U.S.A.
<i>compressus</i>	Carpet Grass	{ 40	E.K.J.*	FoH	Trop. America
		c. 60	Parodi 1946	—	
<i>affinis</i>		80	Brown 1948	Fo	S: U.S.A.

ISACHNE $x = 10$

<i>globosa</i>		60	Tateoka 1954	—	Australia
----------------	--	----	--------------	---	-----------

PASPALUM * $x = 10, 12$

<i>ciliatifolium</i>		20	Burton 1940	Fo	E: U.S.A., W.I.
----------------------	--	----	-------------	----	-----------------

PASPALUM (cont.)

<i>gayanum</i>		20	Saura 1943	Fo	Argentina
<i>haumanii</i>		20	" 1941	Fo	"
<i>paniculatum</i>		20	Burton 1940	Fo	Tr. Amer. & Afr.
<i>racemosum</i> (<i>stoloniferum</i>)		20 + 1-3B	Avdulov & T. 1933	FoH	Peru, Ecuador
<i>rufum</i>		20	Saura 1948a	—	Brazil
<i>supinum</i>		20	Burton 1942	Fo	S.E: U.S.A.
<i>thunbergii</i>		{ 20	Moriya & K. 1949a	—	O.W. Tropics
		{ 40	Tateoka 1954		
<i>vaginatum</i>		20	Brown 1948	Fo	N. America
<i>notatum</i>	Bahia G.	20, 40	Saura 1948a	Fo	Trop. America
		{ 20	Brown 1950		
<i>plicatulum</i>		{ 40	Saura 1941	Fo	S.E: U.S.A.—Arg.
<i>praecox</i>		20, 40	Brown 1948	Fo	S.E: U.S.A.
		{ 20	Saura 1941		
<i>quadrifarium</i>		{ 30	Burton 1942	Fo	Argentina
		{ 60	Krishnaswamy 1940		
<i>boscianum</i>	Bull P.	40	Burton 1940	Fo	E: U.S.A.—Brazil
<i>commune</i>	& 11 spp.	40	Saura 1941, '43, '48a	Fo	Argentina
<i>commersonii</i>		40	Moffett & H. 1949	—	O.W. Tropics
<i>conjugatum</i>	Sour G.	40	E.K.J.*	FoH	Tropics
<i>dissectum</i>		40	Brown 1951	Fo	E: U.S.A.
<i>laeve</i>		40	" 1948	Fo	E: "
<i>lanceolatum</i>		40	Krishnaswamy 1940	—	S. America
<i>longifolium</i>		40	E.K.J.*	Fo	Tr. Asia & Austr.
<i>malacophyllum</i>		40	Burton 1940	Fo	Brazil
<i>pauciciliatum</i>		40	Parodi 1946	—	S. America
<i>scrobiculatum</i>	Koda M.	40	Avdulov 1928	FoG	cult, India
<i>setaceum</i>		40	Brown 1948	Fo	E: U.S.A., Mex.
<i>dilatatum</i>	Dallis G.	{ 40	Brown 1948		
	Large Water G.	{ 50?	Krishnaswamy 1940	FoH	S. America
<i>distichum</i>	Knotgrass, Water Couch	{ 40	Brown 1948		
		{ 48	Burton 1942	SbFo	Sub-Tropics
		{ 60	Parodi 1946		
<i>langei</i>		{ 40	Brown 1951	Fo	S.E: U.S.A., W.I., Venezuela
		{ 60	Burton 1942		
<i>urvillei</i>	Vasey Grass	{ 40, 60	Brown 1950	FoTo	S: U.S.A.—Arg.
		{ 60	Nielsen 1939		
<i>longipilium</i>		60	Burton 1942	Fo	E: U.S.A.
<i>pubescens</i>		60	Brown 1948	Fo	"
<i>pubiflorum</i>		60	" 1951	Fo	S.E: U.S.A., Mex., Cuba
<i>epile</i>		80	Saura 1941	Fo	E: U.S.A., C. Am.
<i>virgatum</i>	Cortadero	80	Avdulov 1931	Fo	S. Tex.—S. Amer.
<i>giganteum</i>		120	Burton 1942	Fo	S.E: U.S.A.
<i>floridanum</i>		120, 160	Brown 1950	Fo	E. & S: U.S.A.
<i>almum</i>	Coomb's Pasp.	24	Burton 1942	Fo	Tex., S. America

TRIBE IV: ARUNDINELLEAE

DANTHONIOPSIS x = 9

<i>dinteri</i>	18	de Wet 1954a	—	E. Africa
----------------	----	--------------	---	-----------

ARUNDINELLA $x = 10, 14$

<i>setosa</i>	20	Ramanathan 1950	—	Nepal
<i>hirta</i>	{ 28	Moriya & K. 1949a	—	Japan
	56	Tateoka 1954	—	

TRISTACHYA $x = 10, 12$

<i>welwitschii</i>	40	Moffett & H. 1949	—	Trop. Africa
<i>hispida</i>	24	de Wet 1954a	Fo	S. Africa

LOUDETIA $x = 10, 12$

<i>simplex</i>	60	Moffett & H. 1939	FoT	Trop. & S. Afr.
<i>flavida</i>	24	de Wet 1954a	—	S. Africa

TRIBE V: ERAGROSTEAEE

TRIODIA (TRIDENS) * $x = 8$

<i>pilosa</i>	{ 16	Covas 1945,	Fo	S: U.S.A., Mex.
	16	Brown 1950	—	
<i>texana</i>	16	" "	—	Texas, Mexico
<i>elongata</i> & 4 spp.	32	" "	Fo	S: U.S.A.

ELEUSINE $x = 9$

<i>tristachya</i>	18	Avdulov 1928	Fo	S. America
<i>oligostachya</i>	18	Krishnaswamy 1940	Fo	Brazil
<i>indica</i> Goose Grass	{ 18	Avdulov 1931, E.K.J.*	FoG	Trop., Sub.-Trop.
	36	Moffett & H. 1949	—	
<i>lagopoides (brevifolia)</i>	36	Krishnaswamy & A. 1935c	Fo	India
<i>coracana</i> Ragi, Finger Mil.	36	Avdulov 1931	ASuFoG	cult, Abyssinia
<i>v. iocussa</i>	39?	Krishnaswamy 1940	—	
<i>compressa (flagellifera)</i>	45	" "	Fo	W. Asia, Tr. Afr.

AELUROPUS $x = 10$

<i>littoralis</i>	20	Avdulov 1933	Sb	Medit.
-------------------	----	--------------	----	--------

TETRACHNE $x = 10$

<i>dregei</i>	20	Moffett & H. 1949	—	S. Africa
---------------	----	-------------------	---	-----------

TRIRAPHIS $x = 10$

<i>andropogonoides</i>	20	de Wet 1954b	Fo	S. Africa
------------------------	----	--------------	----	-----------

LEPTOCHLOA $x = 10$

<i>filiformis</i> Red Sprangletop	20	Brown 1950	—	S: U.S.A., Tr.Am.
<i>neesii (polystachya)</i>	20	Avdulov 1928	Fo	Australia
<i>obtusiflora</i>	20	E.K.J.*	Fo	E. Afr., India
<i>chinensis</i>	40	Avdulov 1928	Fo	Trop. Asia
<i>virgata</i>	40	Parodi 1946	—	S: U.S.A., Tr. Am.
<i>dubia</i> Sprangletop	60	Brown 1950	Fo	S: U.S.A., Mex., Argentina

ERAGROSTIS * $x = 10$

<i>aspera</i> & 7 spp.	20	Moffett & H. 1949	Fo	Tr. & S. Afr., Ind.
<i>cambedsiana</i>	20	Hagerup 1932	—	Trop. Africa
<i>cillanensis</i> Sterile Grass	20	Moffett & H. 1949	FoG	Trop., Sub-Trop.
<i>japonica</i>	20	Avdulov 1928	Fo	Trop. Asia, Austr.
<i>albida</i>	40	Hagerup 1932	Fo	Sudan

ERAGROSTIS (cont.)

<i>bifaria</i>	40	E.K.J.*	Fo	Trop. Asia
<i>brownii</i>	40	"	Fo	Trop. Asia, Austr.
<i>beyrichii</i>	40	Brown 1950	—	S: U.S.A.
<i>chariis (gangetica)</i>	40	E.K.J.*	Fo	Trop. Afr. & Asia
<i>curtipedicellata</i>	40	Brown 1951	—	S: U.S.A.
<i>curvula</i>	{ 40 50	Nielsen 1939 de Wet 1954b	H	S. Africa
<i>echinochloidea</i> & 7 spp.	40	Moffett & H. 1949	Fo	"
<i>superba</i> & 3 spp.	40	de Wet 1954b	Fo	S. Africa
<i>pilosa</i> Ind. Love G. & 2 spp.	40	Ono & T. 1953	Fo	Temp.
<i>secundiflora</i>	40	Brown 1950	—	S: U.S.A.
<i>sessilispica</i>	40	Nielsen 1939	—	"
<i>spectabilis</i> Purp. Lovegrass	{ 40 42	" Nielsen & H. 1937	Fo	S: U.S.A., Mex.
<i>spicata</i>	40	Brown 1950	—	Calif., Tex., Arg., Paraguay
<i>capensis</i>	{ 40 60	Avdulov 1928 Moffett & H. 1949	Fo	S. Africa
<i>tef (abyssinica)</i> Teff Grass	40	" "	FoG	cult, Abyssinia
<i>barrelieri</i>	60	" "	—	Medit., N. Afr.
<i>mexicana</i> Mex. Lovegrass	60	Avdulov 1928	Fo	Texas, Arizona
<i>habrantha</i>	60, 90	Moffett & H. 1949	Fo	Trop. Africa
<i>linearis (pallascens)</i>	80	Hagerup 1932	Fo	W. Africa
<i>ferruginea</i>	80	Tateoka 1954	Fo	Japan

DIPLACHNE x = 10

<i>dubia</i>	40	Covas 1949b	Fo	Argentina
--------------	----	-------------	----	-----------

CLEISTOGENES (DIPLACHNE) x = 10

<i>serotina</i>	40	Avdulov 1931	—	S. Eur.—C. Asia
-----------------	----	--------------	---	-----------------

POGONARTHRIA x = 10

<i>squarrosa</i>	{ 40 40, 42	de Wet 1954b Moffett & H. 1949	—	S. Africa
------------------	----------------	-----------------------------------	---	-----------

DACTYLOCTENIUM (ELEUSINE) x = 10, 12

<i>aegyptium</i> Crowfoot Gr.	{ 20 36 48 34?	P. T. Thomas unp. Moffett & H. 1949 Avdulov 1931, E.K.J.*Fo Krishnaswamy & A. 1935c	Fo	Trop., Sub-Trop.
<i>scindicum</i>	48	Krishnaswamy & A. 1940	Fo	India

TRIBE VI: SPOROBOLAE

CRYPISIS (HELEOCHLOA) x = 8, 9

<i>aculeata</i>	{ 16 54	Polyá 1948 Stebbins, Myers 1947	Fo	Europe
<i>schoenoides</i>	36	Avdulov 1931	Fo	Medit., Temp. As.

MUHLENBERGIA x = 9, 10, 21

<i>filiformis</i>	18	Stebbins, Myers 1947	—	W: N. America
<i>andina</i> Foxtail Muhly	20	" " "	—	" "

MUHLENBERGIA (cont.)

<i>asperifolia</i>	Scratchgrass	20	Stebbins, Myers, 1947	—	N. Amer., Temp. S. America
<i>lindheimeri</i>		20	Brown 1950	—	Texas
<i>polycaulis</i>		20	" 1951	—	Tex., Ariz., Mex.
<i>porteri</i>	Bush M.	20	" "	—	S.W: U.S.A., Mex.
<i>brachyphylla</i>		40	" 1950	—	C: U.S.A.
<i>emersleyi</i>	Bullgrass	40	" "	Fo	Tex., Ariz., Mex.
<i>mexicana</i>	Wire-Stem M.	40	Avdulov 1931	—	E: N. America
<i>monticola</i>	Mesa M.	40	Brown 1951	—	Tex., Ariz., Mex.
<i>racemosa</i>	Marsh Muhly	40	Avdulov 1931	Fo	N. America
<i>reverchoni</i>		40	Brown 1951	—	Texas
<i>rigens</i>	Deer Grass	40	Stebbins & L. 1941	Fo	Tex., Calif., Mex.
<i>squarrosa</i>	Mat M.	40	" " "	Fo	N. America
<i>sylvatica (umbrosa)</i>		40	Avdulov 1931	Fo	E: N. America
<i>pungens</i>		42	Nielsen & H. 1937	Fo	S: U.S.A.
		60	Nielsen 1939	Fo	S: U.S.A.
<i>repens</i>	Creeping M.	60	Brown 1951	—	Texas, Arizona
<i>hugelii</i>		42	Ono & T. 1953	Fo	Himalayas
<i>japonica</i>		42	" "	Fo	Japan

SPOROBOLUS x = 9, 10, 12

x = 9

<i>fimbriatus</i>		18	Moffett & H. 1949	—	S. Africa
<i>virginicus</i>		18	Brown 1950	—	S.E: U.S.A., W.I., Brazil
<i>indicus</i>		{ 18, 36 24	Avdulov 1931 Warmke <i>et al.</i> 1946	Fo	Tropics
<i>cryptandrus</i>	Sand Dropseed	{ 18 36	Nielsen 1939 Brown 1950	FoG	N. America
<i>capensis</i>		{ 18 36	de Wet 1954b Moffett & H. 1949	—	S. Africa
<i>diander</i>		36	Avdulov 1928	Fo	Tr. Asia & Austr.
<i>elongatus</i>		36	Ono & T. 1953	Fo	Australia
<i>neglectus</i>		36	Brown 1950	—	U.S.A.
<i>poiretii</i>	Smut Grass	36	Avdulov 1931	Fo	Trop As. (<i>intr.</i> America)
<i>wrightii</i>	Sacaton	36	Brown 1950	Fo	Tex., Calif., Mex.
<i>asper</i>		54, 108	" "	—	U.S.A.
<i>heterolepis</i>	Prairie Dropseed	72	Nielsen 1939	—	E. & C: U.S.A.
<i>airoides</i>	Alkali D'seed	{ 108 126	Brown 1951 Stebbins & L. 1941	Fo	W: N. America

x = 10, 12

<i>tremulus</i>		20	E.K.J.*	Fo	E. Asia
<i>japonicus</i>		40	Ono & T. 1953	Fo	China, Japan
<i>tenuissimus</i>		40	Hunter 1934	Fo	Tropics
<i>panicoides</i>		24	Moffett & H. 1949	—	Abyssinia
<i>wallichii</i>		24	E.K.J.*	Fo	Trop. Asia
<i>pyramidalis</i>	Rat's Tail G.	24, 30	Moffett & H. 1949	FoGHT	Trop. Africa

LYCURUS x = 10, 14

<i>phleoides</i>	Texas Timothy, Wolftail	{ 28 40	Brown 1951 Avdulov 1931	Fo	S.W: U.S.A.— Argentina
------------------	----------------------------	------------	----------------------------	----	---------------------------

TRIBE VII: ZOISIEAE

HILARIA $x = 9$						
<i>mutica</i>	Tobosa G.	36	Brown & C. 1951	Fo	Tex., Ariz., Mex.	
<i>belangeri</i>	Curly Mes.	36, 72	" "	Fo	" " "	
TRAGUS $x = 10$						
<i>berteronianus</i>		20	Brown 1950	—	Medit.—Afghan.	
<i>racemosus</i>		40	de Wet 1954b	Sb	Medit., N. & S. Africa	
PEROTIS $x = 10$						
<i>patens</i>		40	Moffett & H. 1949	Fo	Natal	
ZOYSIA $x = 10$						
<i>japonica</i>	Korean Lawn G.	40	Forbes 1952	H	Korea, Japan	
<i>matrella</i>	Manila G.	40	" "	HSb	S.E. As., S. Austr.	
<i>tenuifolia</i>	Mascarene G.	40	" "	H	S.E. Asia	

TRIBE VIII: CHLORIDEAE

BECKMANNIA $x = 7$						
<i>erucaeformis</i>	Slough G.	14	Avdulov 1931	Sb	S. Eur., W. Asia	
<i>syzigachne</i>	American S. G.	14	Nielsen & H. 1937	FoSb	E. Asia, N. Amer.	
BOUTELOUA $x = 7, 10$ (Apomixis)						
<i>chondrosioides</i>		{ 14? 20	Brown 1950 Freter & B. 1955	Fo	Tex., Ariz., Mex.	
<i>filiformis</i>	Slender	{ 14? 20, 21, 22	Brown 1950 Snyder & H. 1953	Fo	" " "	
<i>heterostega</i>		20	" " "	Fo	W. Indies	
<i>radicosa</i>		20	Freter & B. 1955	Fo	Calif., Mex.	
<i>uniflora</i>		20	" " "	Fo	Tex., Mex.	
<i>rothrockii</i>		22	Fults 1942	Fo	Ariz., Calif., Mex.	
<i>breviseta</i>		{ 21 28	" " " Brown 1950	Fo	Texas, Mexico	
<i>eriopoda</i>	Black Grama	{ 21 28	Fults 1942 Brown 1950	Fo	S.W: U.S.A., Mex.	
<i>hirsuta</i>	Hairy Grama	{ 21, 37, 42	Fults 1942 Brown 1951	Fo	U.S.A., Mexico	
<i>trifida</i>		28	" 1950	Fo	S: U.S.A.	
<i>rigidisetia</i>		{ 28 35	" " " Fults 1942	Fo	S.W: U.S.A., Mex.	
<i>gracilis</i>	Blue Grama	{ 28, 35, 42, 61, 77	" " " Snyder & H. 1953	Fo	W. & C: U.S.A., Mexico	
<i>as oligostachya</i>		50	Avdulov 1931			
<i>curtipendula</i>	Side-oats Grama	{ 28, 35, 40, 42, 56, 70	Fults 1942	Fo	U.S.A.—Arg.	
		85-101	Harlan 1949			
	(sex.)	40, 52	Freter & B. 1955			
<i>simplex</i>	(apo.) Mat Grama	74, 80, 82, 86, 96	" " "	Fo	S: U.S.A.—Arg.	
SPARTINA $x = 7$						
<i>patens</i>	Salt Meadow C.G.	28	Church 1936	Sb	E: N. America	
<i>v. juncea</i>		42 56	" 1940			

SPARTINA (cont.)

<i>pectinata</i>	Prairie C. G.	28	Church 1929a	SbT	N. America
as <i>michauxiana</i>		42, 84	" 1940		
<i>bakeri</i>		42	" "	Sb	S.E: U.S.A.
<i>caespitosa</i>		42	" "	Sb	"
<i>cynosuroides</i>	Big Cord G.	42	" "	Sb	"
<i>gracilis</i>	Alkali C. G.	42	" "	Sb	W. & C: U.S.A.
<i>leantha</i>		56	" "	Sb	California
<i>maritima</i> (<i>stricta</i>)		56	Huskins 1930	Sb	Europe
<i>alterniflora</i>	Smooth C. G.	56	Church 1940	Sb	E: N. America
v. <i>pilosa</i>		70	Huskins 1930		(Eur., <i>intr.</i>)
<i>townsendii</i>	Rice G.	126	" "	SbT	S. England, <i>cult</i>
(<i>alterniflora</i> × <i>maritima</i>)					

CRASPEDORACHIS x = 9

<i>rhodesiana</i>		27	Moffett & H. 1949	—	Trop. Africa
-------------------	--	----	-------------------	---	--------------

CYNODON x = 9, 10

<i>bradleyi</i>		18	Hurcombe 1946	—	S. Africa
<i>diploideum</i>	Giant Star G.	18	E.K.J.*	Fo	Trop. Africa
<i>hirsutus</i>		18	Covas 1949b	—	S. Africa
<i>plectostachyum</i>	E. Afr. Star G.	18	Sampath & R. 1949	Fo	E. Africa
		18, 54	Moffett & H. 1949		
<i>dactylon</i>	Bermuda G.	36	Brown 1950	FoHM	Cosmop.
		40	Hurcombe 1947		
<i>transvaalensis</i>	Florida G.	20	" "	—	S. Africa
<i>magennisii</i>		30	" "	—	"

DINEBRA x = 10

<i>retroflexa</i>		20	Avdulov 1931	—	Africa—India
-------------------	--	----	--------------	---	--------------

TRICHONEURA x = 10

<i>grandiglumis</i>		20	Moffett & H. 1949	—	S. Africa
---------------------	--	----	-------------------	---	-----------

CHLORIS* x = 10

<i>distichophylla</i>		20	Krishnaswamy 1940	Fo	S. America
<i>virgata</i>	Sweet G.	20	Moffett & H. 1949		
		26	P. T. Thomas unpub.	FoH	Tropics
as <i>caudata</i>		40	Krishnaswamy 1940		
<i>barbata</i>		20	Avdulov 1928	Fo	Tropics
		40	E.K.J.*		
<i>gayana</i>	Rhodes G.	20	Brown 1950	Fo	Trop. & S. Africa
		40	Moffett 1944		
<i>gracilis</i>		30	Krishnaswamy 1940	—	Tropics
<i>pilosa</i>		30	P. T. Thomas unpub.	Fo	Sudan
<i>acuminata</i>		40	Avdulov 1928	—	S. America
		30	de Wet 1954b		
<i>pycnothrix</i>		36	P. T. Thomas unpub.	—	Trop. Africa
		40	Moffett & H. 1949		
<i>uliginosa</i>		40	Parodi 1946	—	Argentina
<i>cucullata</i>		40	Avdulov 1928	Fo	Tex., New Mex.
<i>truncata</i>	Star G.	40	" "	Fo	Australia
<i>verticillata</i>	Windmill G. & 3 spp.	40	Brown 1950	Fo	C: U.S.A.
<i>bournei</i>		40	E.K.J.*	Fo	India
		50	Krishnaswamy 1940		

CHLORIS (cont.)

<i>submutica</i>		{ c. 65 80	Krishnaswamy 1940 Avdulov 1931	Fo	Mexico
ENTEROPOGON $x = 10$ <i>monostachyos</i>		20	Ramanathan 1950	—	India
SCHEDONNARDUS $x = 10$ <i>paniculatus</i> Tumblegrass		30	Brown 1950	Fo	C: U.S.A., Arg.
ASTREBLA $x = 10$ <i>lappacea</i>		40	Brown 1950	—	Australia
GOUINIA $x = 10$ <i>latifolia</i>		40	Parodi 1946	—	Argentina
MICROCHLOA $x = 10$ <i>kunthii</i>		40	Moffett & H. 1949	—	Trop. America
TRICHLORIS $x = 10$ <i>mendocina</i>		40	Avdulov 1931	H	S: U.S.A., S: S. America
<i>pluriflora</i>		60	Brown 1951	—	S. Tex., Mex., S: S. America
BUCHLOË $x = ?$ <i>dactyloides</i> Buffalo G.		{ 56 60	Nielsen 1939 Avdulov 1931	Fo	Sask.—S. Mex.

TRIBE IX: PAPPOPHOREAE

ENNEAPOGON $x = 9, 10$ <i>elegans</i>		20	E.K.J.*	Fo	N.E. Afr.—India
<i>wrightii</i> Spike Pappus G.		20	Covas 1945	Fo	S.W: U.S.A., Peru, Bolivia
<i>cenchroides</i>		36	P. T. Thomas unp.	Fo	S. Africa
<i>scoparius</i>		36	de Wet 1954b	Fo	„
COTTEA $x = 10$ <i>pappophoroides</i>		20	Covas 1945	Fo	S.W: U.S.A.—Argentina
PAPPOPHORUM $x = 10$ <i>bicolor</i>		60 (40)	Brown 1950	—	Tex., Ariz., Mex.
<i>mucronulatum</i>		60	„ „	Fo	S. Amer., Mex.

TRIBE X: ARISTIDEAE

ARISTIDA $x = 11, 12, 19$ <i>adscensionis</i>		22	Covas & B. 1945	FoT	Tropics
<i>congesta</i>		22	Moffett & H. 1949	—	S. Africa
<i>macilenta</i>		22	„ „	—	„
<i>mendocina</i>		22	Covas & B. 1945	—	Chile
<i>meridionalis</i>		22	Moffett & H. 1949	—	S.W. Africa
<i>scabrivalvis</i>		22	„ „	—	Trop. Africa
<i>spgazzinii</i>		22	Covas & B. 1945	—	Uruguay
<i>submucronata</i>		22	de Wet 1954b	—	S. Africa

ARISTIDA (cont.)

<i>depressa</i>	44	E.K.J.*	Fo	India
<i>hamulosa</i>	44	Stebbins & L. 1941	Fo	S.W: U.S.A.— Guatemala
<i>leucophaea</i>	44	Moffett & H. 1949	—	Rhodesia
<i>subulata</i>	44	Covas & B. 1945	—	Argentina
<i>barbicollis</i>	24	de Wet 1954b	—	S. Africa
<i>junciformis</i>	24	" "	—	"
<i>canescens</i>	48	" "	—	"
<i>rhiniochloa</i>	38	P. T. Thomas unp.	—	Sudan

TRIBE XI: LEPTUREAE

PSILURUS $x = 7$

<i>nardoides</i>	14	Avdulov 1931	—	S. Eur.—Afghan.
------------------	----	--------------	---	-----------------

PHOLIURUS (LEPTURUS) $x = 7$

<i>pannonicus</i>	14	Avdulov 1931	—	S. Eur., Cauc.
-------------------	----	--------------	---	----------------

PARAPHOLIS (PHOLIURUS) $x = 7, 9?$

<i>strigosa (filiformis)</i>	14	Castro & F. 1946	—	S. Eur., N. Afr.
<i>incurva</i>	{ c. 32	"	Sb	W. Eur., Medit.
	36	Avdulov 1931		
	38	Rodrigues 1953		

MONERMA (LEPTURUS) $x = 13$

<i>cylindrica (subulata)</i>	{ 26	Avdulov 1931	Fo	Medit.—S. Afr.
	52	Hunter 1934		

TRIBE XII: NARDEAE

NARDUS $x = 13$

<i>stricta</i>	Mat Grass	26	Avdulov 1928	—	Eur., N. As., Cauc.
----------------	-----------	----	--------------	---	---------------------

TRIBE XIII: LYGEEAE

LYGEUM $x = 20$

<i>spartum</i>	Esparto	40	Ramanujam 1938	T	Medit.
----------------	---------	----	----------------	---	--------

TRIBE XIV: AGROSTAE

APERA $x = 7$

<i>interrupta</i>	14	Maude 1939	—	Europe
<i>spica-venti</i>	14	Avdulov 1931	—	Eur., Siberia

CHAETURUS $x = 7$

<i>fasciculatus</i>	14	Avdulov 1931	—	Spain, Portugal
---------------------	----	--------------	---	-----------------

CORNUCOPIAE $x = 7$

<i>cucullatum</i>	14	Avdulov 1931	—	E. Medit.
-------------------	----	--------------	---	-----------

GASTRIDIDIUM $x = 7$

<i>ventricosum</i>	Nit Grass	14	Rutland 1941	Fo	W. Eur., Medit.
--------------------	-----------	----	--------------	----	-----------------

LAGURUS $x = 7$						
<i>ovatus</i>	Hare's-tail G.	14	Avdulov 1931	FoH	W. France, Med., Canary Is.	
MIBORA $x = 7$						
<i>minima</i> (<i>verna</i>)		14	Avdulov 1931	—	W. Eur., Greece, Algeria	
PHLEUM $x = 5, 7$						
<i>echinatum</i>		10	Ellerström & T. '50	—	S. Europe	
<i>arenarium</i>	Sand Timothy	14	Wulff 1937a	Sb	W. Eur., Medit.	
<i>hirsutum</i> (<i>micheelii</i>)		14	Nordenskiöld 1937	—	Eur., Cauc.	
<i>subulatum</i>		14	Myers 1941	Fo	N. America	
<i>nodosum</i>	Cat's tail	14, 21	Nordenskiöld 1941	Fo	N. Temp.	
<i>alpinum</i>	Mountain T.	14, 28	Litardière 1949a	Fo	Arctic, Alpine	
<i>commutatum</i> (<i>alpinum</i>)		{ 14 28	" 1948b Nordenskiöld 1941	Fo	" "	
<i>phleoides</i> (<i>boehmeri</i>)	14 + 0-4B, 28 + 0-2B		Böcher 1950	—	Eur., N. Afr., Sib., Turkestan	
<i>paniculatum</i> (<i>asperum</i>)	Rough T.	28	Avdulov 1928	—	Eur., S.W. Asia	
		42	Myers 1944			
<i>pratense</i>	Timothy	{ (21) (28-84)	Levan 1941 " 1949	Fo	Eur., N. Asia	
LIMNODEA $x = 7$						
<i>arkansana</i>		14	Brown 1950	—	S.E. U.S.A.	
COLEANTHUS $x = 7$						
<i>subtilis</i>		14	Litardière 1950	—	Europe	
AMMOPHILA (PSAMMA) $x = 7$						
<i>arenaria</i>	Marram Grass	28	Westergaard 1941	Sb	W. Europe	
<i>breviligulata</i>	Am. Beach G.	28	Church 1929a	Sb	N. America	
<i>baltica</i>	Hybrid M. G.	28, 42	Westergaard 1942	Sb	W. Europe	
(A. arenaria × Calamagrostis epigelos)						
AGROSTIS * $x = 7$						
<i>alpina</i>		14	Reese 1952a	—	Europe	
<i>biebersteiniana</i>		14	Sokolovskaja 1938	Fo	S. Russia	
<i>elegans</i>		14	" "	Fo	S.W. Eur., N. Afr.	
<i>juressi</i>		14	Gardé 1952b	—	Spain, Portugal	
<i>nebulosa</i>	Cloud Grass	14	Avdulov 1931	FoH	" "	
<i>reuteri</i>		14	Björkman 1954	—	" "	
<i>salmantica</i>		14	Litardière 1950	—	" "	
<i>setacea</i>	Bristle Bent G.	14	Maude 1940	Fo	W. Europe	
<i>truncatula</i>		14	Gardé 1952b	—	Europe	
<i>verticillata</i>		14	Brown 1950	—	Temp. O.W.	
<i>rupestris</i>		14, 28	Björkman 1954	—	Eur., N. Amer.	
<i>trinii</i>		14, 28	Sokolovskaja 1938			
<i>canina</i>	Brown Bent	14, 28, 35, 42, 56	Björkman 1954	H	Temp. Eurasia	
<i>castellana</i>		{ 42 28 + 0-3B	Rodrigues 1953 Björkman 1954	—	Spain, N. Afr.	
<i>matsumurae</i>		28	Moriya & K. 1949a	—	Japan	
<i>mongolica</i>		28	Sokolovskaja 1938	—	Sib., Mong.	
<i>rossae</i>		28	Myers 1947	Fo	W: N. America	
<i>schraderiana</i>		28	Björkman 1954	—	Alps, Pyrenees	
<i>tenulis</i>	Fine Bent	28 (29-41)	Stuckey & B. 1946	FoH	Temp.	
<i>stolonifera</i>	Marsh Bent	28, 35, 42 28-46	Björkman 1954 Juhl 1952b	FoH	N. Temp.	
<i>as alba</i>		33-42	Stuckey & B. 1946			

AGROSTIS (cont.)

<i>clavata</i>	& 3 spp.	42	Sokolovskaja 1938	Fo	N. Eurasia
<i>diegoensis</i>	Thin G.	42	Stebbins & L. 1941	Fo	W: N. America
<i>exarata</i>	Spike Redtop	42	" "	Fo	N. America
<i>hallii</i>		42	" "	Fo	California
<i>gigantea</i>	Bl. Bent	42 + 0-4B	Björkman 1954	FoH	North Temp.
<i>hendersoni</i>		42	Stebbins, Beetle '45	Fo	Oregon
<i>nevadensis</i>		42 + 2-10B	Björkman 1954	—	Spain
<i>borealis</i>	Arctic Bent	56	" "	Fo	N. & Arctic
<i>lepida</i>		56	Myers 1947	Fo	California
<i>retrofracta</i>		56	" "	Fo	Hawaii, Polyn.

ALOPECURUS * $x = 7$

<i>aequalis</i>	Orange Foxtail	14	Johnsson 1941	Fo	N. Temp.
<i>amurensis</i>		14	Strelkova 1938	Fo	Siberia
<i>bulbosus</i>		14	Maude 1940	Fo	W. Eur., Algeria
<i>gerardi</i>		14	Johnsson 1941	Fo	Eur., S.W. Asia
<i>heleochooides</i>		14	" "	Fo	Chile
<i>mysuroides</i>	Black Twitch	14	Kattermann 1930	—	Eur., Medit., W. Asia
<i>utriculatus</i>		14	Strelkova 1938	Fo	Eur., S.W. Asia
<i>geniculatus</i>	Water F.	28	Avdulov 1928	—	N. Temp.
<i>japonicus</i>		28	Tateoka 1954	—	Japan
<i>ventricosus</i>	& 4 spp.	28	Strelkova 1938	Fo	Eur., N. Asia
<i>pratensis</i>	Mead. F.	28 + 0-2B, 42	Johnsson 1941	Fo	N. Temp.
<i>aucheri</i>	& 4 spp.	56	Strelkova 1938	Fo	S.W. Asia
<i>roshevitzianus</i>		70	Avdulov 1931	Fo	Siberia
<i>borealis</i>		98	Strelkova 1938	Fo	N. & Arctic
<i>pseudobrachystachys</i>		98	" "	Fo	Siberia
<i>antarcticus</i>		112-116	Johnsson 1941	Fo	S. America
<i>alpinus</i>	Alpine F.	{ 119-122 112-130	" " Flovik 1940	Fo	Arctic
<i>glaucus</i>		{ 130 130	S. & S. 1938, Johnsson 1941	Fo	C. Asia

POLYPOGON $x = 7$

<i>maritimus</i>		14, 28	Gardé 1952b	—	Medit.
<i>monspeliensis</i>	Annual Beard G.	28	Avdulov 1931	FoH	Medit., Abyss., S Africa
<i>semiverticillatus</i>	Water Bent	28	Björkman 1954	Fo	Europe
<i>littoralis</i>		28	Rutland 1941	—	Eur., C. Asia
<i>as fugax</i>		42	Avdulov 1931	—	Europe
<i>lutosus</i>		28, 42	Heiser & W. 1948	—	Europe

CINNA $x = 7$

<i>latifolia</i>	Drooping Woodreed	28	Ehrenberg 1945	Fo	N. Temp.
------------------	-------------------	----	----------------	----	----------

CALAMAGROSTIS* $x = 7$ (Some high polyploids apomictic)

<i>arundinacea</i>		28	Nygren 1946	Fo	N. Temp.
<i>cainii</i>	& 5 hybrids	28	" 1954	—	Tennessee
<i>canescens</i>	Small Reed	28	" 1946	—	Eur., Temp. Asia
<i>koelerioides</i>		28 + 0-2B	" 1954	—	California
<i>langsдорffii</i>		28	Tateoka 1954	—	N. & E. Asia

CALAMAGROSTIS* (cont.)

<i>longiseta</i>		28	Ono & T. 1953	—	Japan
<i>montanensis</i>		28	Nygren 1954	Fo	C: N. Amer.
<i>neglecta</i>		28	" 1946	Fo	N. Temp.
<i>pseudophragmites</i>		28	Ono & T. 1953	—	Eurasia
<i>varia</i>		28	Nygren 1946	Fo	Eur., N. Asia
<i>breweri</i>	Shorthair	28, 42	" 1954	Fo	California
<i>hakonensis</i>		28, 56	Tateoka 1954	—	Japan
<i>rubescens</i>	Pinegrass	28, 42, 56	Nygren 1954	Fo	W. & C: N. Amer.
<i>epigeios</i>	Bush	28, 42, 56	" 1946	—	Eur., Temp. Asia
	Grass	c. 70	Avdulov 1931		
<i>inexpansa</i>	N. Reed G.	28, 56, 58, 84-105	Nygren 1954	Fo	Calif., Minn.
<i>chalybaea</i>		42	Nygren 1946	—	Norway
<i>canadensis</i>	Bluejoint	42-66	" 1954	Fo	N. America
<i>purpurascens</i>	Purp. Reed G.	40-57	" "	—	" "
<i>lapponica</i>		42-112	" 1946	Fo	N. Temp.
<i>purpurea</i>		(28) 56-91	" 1946, 1949	Fo	N. Eurasia
<i>bolanderi</i>		56	" 1954	—	California
<i>perplexa</i>		70	" "	—	New York
<i>fernaldii</i>		84	" "	—	Maine
<i>porteri</i>		84, 87	" "	—	E: N. Amer.
<i>crassigluma</i>		140	" "	—	W: N. Amer.

PHIPPSIA x = 7

<i>algida</i>		28	Flovik 1940	—	North & Arctic
<i>concinna</i>		28, 29	" "	—	" "

ARCTAGROSTIS x = ?

<i>latifolia</i>		62	Flovik 1938	—	Arctic
------------------	--	----	-------------	---	--------

GARNOTIA x = 10

<i>scoparia</i>		20	Ramanathan 1950	—	India
-----------------	--	----	-----------------	---	-------

TRIBE XV: PHALARIDEAE

ANTHOXANTHUM x = 5

<i>alpinum</i>		10	Östergren 1942	—	Europe
<i>ovatum</i>		10	" "	—	Spain, Mor.
<i>puelli (aristatum)</i>		10	Avdulov 1928	—	Medit.
<i>odoratum</i>	Sw. Vernal G.	10 + 0-4B 10, 20	Östergren 1947 " 1942	FoHM	Eur., N. As., Cauc. N. Africa
<i>japonicum</i>		70	Tateoka 1954	—	Japan
<i>amarum</i>		80	Östergren 1942	—	S.W. Europe

PHALARIS x = 6, 7

<i>canariensis</i>	Canary G.	12	Hansen & H. 1953a	G	N. Afr., Can.
<i>brachystachys</i>		12	Parthasarathy 1938	Fo	Medit., S.W. Asia
		14	Miège 1939		
<i>angusta</i>		14	Saura 1943	Fo	Argentina
<i>aquatica</i>		14	Gardé 1952b	—	Europe
<i>lemmoni</i>		14	Parthasarathy 1938	Fo	California
<i>paradoxa</i>		14	Hansen & H. 1953a	Fo	Medit.
<i>caroliniana</i>		14	Brown 1950	—	S: U.S.A.

PHALARIS (cont.)

<i>coerulescens</i>		{ 14 Hansen & H. 1953a 28 Miège 1939	Fo	Medit.
<i>arundinacea</i>	Reed	{ 14, 28 Church 1929b 27-31, 35 Hansen & H. 1953a 42 Brock unp.	FoH	N. Temp.
<i>californica</i>		28 Stebbins & L. 1941	Fo	California
<i>minor</i>		28, 29 Hansen & H. 1953a	Fo	Medit., N. Asia
<i>tuberosa</i>	Toowoomba C.G.	28 " " "	Fo	Medit.

HIEROCHLOË $x = 7$

<i>odorata</i>	Holy Grass	{ 28 L. & L. 1948 42 Tateoka 1954 28, 56 Church, Myers 1947	FoH	North & Arctic
<i>occidentalis</i>	Calif. Sweet G.	42 " " "	Fo	W: U.S.A.
<i>alpina</i>		56 Flovik 1940	Fo	North & Arctic

TRIBE XVI: FESTUCEAE

BRIZA $x = 5, 7$

<i>minor</i>		10 Avdulov 1931	H	S. Eur., Medit.
<i>glomerata</i>		14 Saura 1947	—	Argentine
<i>maxima</i>		14 Kattermann 1933	H	Medit.
<i>media</i>	Quaking Grass	14 Avdulov 1931	FoH	Eur., Temp. Asia
<i>elatior</i>	14 + 1-3B	" "	FoH	S.E. Eur., S.W. As.
<i>stricta</i>		28 Saura 1947	—	Chile
<i>subaristata</i>		28 " "	—	Argentine

CATABROSA $x = 5$

<i>aquatica</i>		20 Avdulov 1931	Fo	N. Temp.
-----------------	--	-----------------	----	----------

SCHIZACHNE (MELICA) $x = 5$

<i>purpurescens</i>	False Melic	20 Boyle 1944	Fo	N. Am., N.E. As.
---------------------	-------------	---------------	----	------------------

DISTICHLIS $x = 5$

<i>spicata</i>	Saltgrass	40 Stebbins & L. 1941	—	America
<i>stricta</i>	Desert Saltgrass	40 " " "	Fo	N. America
<i>texana</i>		40 Brown 1951	—	Texas, Mexico

GLYCERIA $x = 5$

<i>alnasteretum</i>		20 Tateoka 1954	Fo	Asia
<i>lithuanica</i>		20 " "	Fo	N. Eur., Cauc.
<i>borealis</i>		20 Church 1949	Fo	N. America
<i>declinata (cookei)</i>		20 " "	Fo	W. Europe
<i>elata</i>	Tall Manna G.	20 " "	Fo	W: N. America
<i>grandis</i>	American M.G.	20 " "	Fo	N. America
<i>striata (nervata)</i>	Fowl M.G.	20 " "	Fo	"
<i>acutiflora</i>		{ 20 Tateoka 1954 40 Church 1949	Fo	E: N. Amer., N.A. Asia
<i>fluitans</i>	Flote-grass, Manna G.	{ 40 Löve 1951 40 Church 1949	FoG	N. Temp.
<i>leptostachya</i>		40 " "	Fo	W: U.S.A.
<i>melicaria</i>		40 " "	Fo	E: N. America
<i>nubigena</i>		40 " "	Fo	Tenn.
<i>obtusata</i>		40 " "	Fo	E: N. America
<i>occidentalis</i>		40 " "	FoG	W: N. America

BROMUS (cont.)

<i>texensis</i>		28	Myers 1947	Fo	Texas, Mexico
<i>catharticus</i>	Rescue Grass	{ 28	Moriya & K. 1949a	Fo	N. America
(<i>unioloides</i>)		{ 42	Stebbins & T. 1944		
<i>madritensis</i>	Wall B.	{ 28	Knowles 1944	—	Eur., N. Afr., W. Asia
		{ 42	Stählin 1929		
<i>auleticus</i>		42	Elliott 1949	—	Argentina
<i>brevis</i>		42	Covas & S. 1946	—	"
<i>cappadocicus</i>		42	Stählin 1929	Fo	Asia Minor
<i>macrantherus</i>		42	Cugnac & S. 1941	Fo	Eur., Medit.
<i>sitchensis</i>		42	Stählin 1929	Fo	Sitcha Is.
<i>trinii</i>		42	Knowles 1944	Fo	Chile
<i>uruguayensis</i>		42	Stebbins, Myers '47	—	Uruguay
<i>variegatus</i>		42	Stählin 1929	Fo	Cauc., Medit.
<i>erectus</i>	Upright B.	{ 42			
v. <i>eu-erectus</i>		{ 56	Avdulov 1931	Fo	Eur., Asia M.
<i>marginatus</i>		{ 42	Nielsen & H. 1937	Fo	W: N. America
		{ 56	Stebbins & T. 1944		
<i>pumpellianus</i>		{ 42	Stählin 1929	Fo	" "
		{ 56	Elliott 1949		
<i>inermis</i>	Smooth B.	{ 28	Knobloch 1953		
		{ 42, 56	" 1943		
		{ 56 + 0-11B	Hill & M. 1948	Fo	Temp. O.W.
		{ 56 (28)	Elliott 1949		
		{ 56, 70	Nielsen 1939		
<i>rigidus</i>	Ripgut Grass	{ 42	Cugnac & S. 1941	Fo	Eur., N. Afr.
(<i>villosus</i>)		{ 56	Stebbins & L. 1941		
		{ 56, 70	Beck & H. 1932		
<i>breviaristatus</i>		56	Stählin 1929	Fo	W: N. America
<i>carinatus</i>	Calif. B.	56	Stebbins & T. 1944	Fo	" "
<i>gussonii</i>	Great B.	56	Cugnac & S. 1941	Fo	" "
<i>maritimus</i>		56	Stebbins & W. 1949	Fo	California "
<i>pitensis</i>		56	H. S. Walters 1952	—	Ecuador
<i>riparius</i>		70	Elliott 1949	—	Russia
<i>arizonicus</i>		84	Stebbins <i>et al.</i> 1944	Fo	Arizona

FESTUCA x = 7 (High Polyploids Apomictic)

<i>amethystina</i>		14	Litardière 1950	FoH	Europe
<i>borderi</i>		14	" "	—	"
<i>duriuscula</i>		14	S. & S. 1940 "	—	Asia
<i>geniculata</i>		14	Avdulov 1931	Fo	Medit.
<i>paniculata</i>		14	Litardière 1950	—	
<i>polesica</i>		14	Böcher 1947b	—	E. Europe
<i>pratensis</i>	Meadow Fes.	14 + 0-1B	Myers & H. 1947	Fo	Eur., N. Asia
(<i>elator</i>)		14 + 0-16B	Bosemark 1954		
<i>pumila</i>		14	Litardière 1950	—	Europe
<i>rigida</i>		14	Maude 1939	—	Eur., N. Afr.
<i>supina</i>		14	S. & S. 1940		
<i>tatrae</i>		14	Brandberg 1948		
<i>tenuifolia</i>	Sheep's F.	14	Thomas, M. 1939	Fo	Europe
<i>glauca</i>		14, 28	Brandberg 1948	—	"

FESTUCA (cont.)

<i>pseudovina</i>		{ 14	Brandberg 1948	—	Europe
		28	Felfoldy 1947a		
<i>altissima</i>	Reed Fescue	{ 14	Litardiére 1950	Fo	Eur., Asia
(<i>sylvatica</i>)		42	Stählin 1929		
<i>paniculata</i>		14, 28, 42	Litardiére 1950		
<i>varia</i>		14, 28, 42	Stählin 1929	—	Eur., Med., A.M.
<i>ovina</i>	Sheep's Fescue	{ 14, 21, 28, 42	L. & L. 1942		
		28, 35	Skalinska 1950a		
		56	Church 1929a	FoH	Eurasia
		70	Turesson 1930		
<i>v. vivipara</i>		{ 21, 28, 49	Flovik 1940		
		28, 35	Piotrowicz 1954		
<i>rubra</i>	Red Fescue	{ 14, 28, 42, 56, 70	L. & L. 1942		
		28, 42	Brandberg 1948	FoH	N. Temp., Arctic
		42, 46, 53, 64	Juhl 1952b		
<i>altaica</i>		28	S. & S. 1940	—	Siberia
<i>ciliata</i>		28	Avdulov 1928	Fo	Eur., S.W. Asia
<i>extremiorientalis</i>		28	Ono & T. 1953	—	Korea
<i>elmeri</i>		28	Stebbins & L. 1941	Fo	W: U.S.A.
<i>idahoensis</i>	Bluebunch F.	28	" " "	Fo	W: N. America
<i>occidentalis</i>	Western F.	28	" " "	Fo	" "
<i>parvigluma</i>		28	Moriya & K. 1949a	—	Japan
<i>subuliflora</i>		28	Maude 1940	Fo	W: N. America
<i>valesiaca</i>		28	Felfoldy 1947b	—	India
<i>viridula</i>		28	Stebbins, Myers '47	Fo	W: U.S.A.
<i>heterophylla</i>		{ 28	Brandberg 1948	Fo	W. Europe
		42	Stählin 1929		
<i>trachyphylla</i>		28, 42	Bøcher 1947b	—	Europe
<i>arundinacea</i>	Tall	28	Stählin 1929		
(<i>elator</i>)	Fescue	{ 42 + 0-2B	Myers & H. 1947	Fo	"
		70	Lewitzky & K. 1927		
<i>arizonica</i>	Pinegrass	42	Brown 1951	Fo	S.W. U.S.A.
<i>coelestis</i>		42	S. & S. 1940	—	Arctic Eurasia
<i>cryophila</i>		42	Flovik 1940	—	" "
<i>fallax</i>	Chewings F.	42	Maude 1940	Fo	Temp.
<i>gigantea</i>	Giant F.	42	Stählin 1929	Fo	Eur., N. As., Afr.
<i>kirilovii</i>		42	S. & S. 1940	—	C. Asia
<i>longifolia</i>	Hard F.	42	Maude 1940	FoH	Europe
<i>sulcata</i>		42	Felfoldy 1947b	—	"
<i>californica</i>		56	Stebbins & L. 1941	Fo	W: N. America
<i>kingii</i>	Spike F.	56	Boyle 1950	Fo	" "
<i>kryloviana</i>		70	S. & S. 1940	Fo	Pamir
<i>maritima</i>		70	Wulff 1937a	Fo	Medit.

VULPIA (FESTUCA) x = 7

<i>alopecurus</i>		14	Avdulov 1928	Fo	Medit.
<i>bromoides</i>	Squirrel tail F.	14	Stählin 1929	—	Temp.
<i>geniculata</i>		14	Rodrigues 1953	—	W. Medit.
<i>pyramidata</i>		14	Litardiére 1950	—	Europe
<i>myuros</i>	Rat's-tail F.	14, 42	" 1948d	Fo	Temp.
		14	" 1950		
<i>membranacea</i>		{ 42	Maude 1940	Fo	Eur., Medit.
<i>ambigua</i>		28	" "	Fo	S.W. Eur., Med.

POA* $x = 7$ (High Polyploids Apomictic)

<i>chaixii</i>	Meadow Grass	14	Avdulov 1931	Fo	Eur., Asia M.
<i>infirmia (exilis)</i>		14	Nannfeldt 1937	Fo	Medit.
<i>remota</i>		14	L. & L. 1942	—	N. Eur., Cauc.
<i>supina</i>		14	Nannfeldt 1937	Fo	Europe
<i>annua</i>	Annual M. G.	28	Litardière 1938	FoH	Cosmop.
<i>trivialis</i>	Rough-st. M. G.	14, 27, 28	Guinochet 1943	Fo	N. Temp.
<i>alpina</i>	Alpine M. G.	{ 14 + 0-8B 28-74	Müntzing 1948 " 1940, 1954	Fo	Arctic, Alpine
<i>bulbosa</i>		{ 14 28, 45 42 + 1B	Guinochet 1943 Akerberg 1942 Hartung 1946	FoH	Temp. O.W.
<i>acroleuca</i>		28	Tateoka 1954	Fo	Japan
<i>badensis</i>		28	Armstrong 1937	Fo	C. Europe
<i>bolanderi</i>		28	Myers 1947	Fo	W: N. America
<i>cuspidata</i>		28	W. L. Brown 1939	Fo	E: U.S.A.
<i>douglasii</i>	& 4 spp.	28	Hartung 1946	Fo	California
<i>iridifolia</i>	& 5 spp.	28	Saura 1943, 1948a	Fo	Argentina
<i>maroccana</i>		28	Nannfeldt 1938	Fo	Morocco
<i>rivulorum</i>		28	" "	Fo	"
<i>sibirica</i>		28	S. & S. 1938	Fo	Cauc., Siberia
<i>sylvestris</i>		28	W. L. Brown 1939	Fo	E: U.S.A.
<i>violacea</i>		28	Stählin 1929	Fo	S. Europe
<i>wolfii</i>		28	W. L. Brown 1939	Fo	E. & C: U.S.A.
<i>altaica</i>		28, 42	S. & S. 1940	Fo	Altai
<i>cusickii</i>	Bluegrass	{ 28 42	Stebbins & L. 1941 Hartung 1946	Fo	W: N. America
<i>palustris</i>	Fowl B.G.	28-30, 42	L. & L. 1942	Fo	N. Temp.
<i>nemoralis</i>	Wood	{ 28-38, 42, 43 47-49	" " " " L. 1950	FoH	Eur., N. Asia
	M.G.	c. 70	Kato 1951		
<i>pratensis</i>	Smooth-stalked	28, 56, 70	Avdulov 1931	FoH	N. Temp.
	M.G.,	49-84	Hartung 1946		
	Kentucky Blue G.	36-123	Nissen 1950		
		38-96	Juhl 1952a		
<i>v. vivipara</i>		42 + 4B	Flovik 1940		
<i>v. eupratensis</i>		50-124	Akerberg 1942		
<i>sterilis</i>		{ 28 42	Stählin 1929 Armstrong 1937	Fo	E. Eur., N. Asia
<i>confinis</i>		42	Hartung 1946	Fo	W: N. America
<i>longifolia</i>		43	" "	—	Caucasus
<i>tibetica</i>		42	S. & S. 1938	Fo	Tibet
<i>laxa</i>		28, 42, 43, 81	L. & L. 1948	Fo	N. Europe
<i>caesia</i>		42	Stählin 1929	Fo	"
<i>arachnifera</i>	Texas Bluegrass	42	W. L. Brown 1939	Fo	S: U.S.A.
		c. 54, 56, c. 63	Hartung 1946		
<i>compressa</i>	Canada	{ 35, 42, 49	Akerberg 1942		
	B. G.	{ 45, 49, 56	L. & L. 1948	Fo	North Reg.
<i>glauca</i>		{ 42-70 63	" 1942 Bøcher & L. 1950	Fo	N. Temp. & Arct.
<i>herjedalica</i>		47-64	L. & L. 1948	—	Scandinavia
<i>scabrella</i>	Skyline B.G.	44 + 1B-104	Hartung 1946	Fo	W: U.S.A.
<i>glaucofolia</i>		50 + 0-1B, 56	" "	Fo	W. & C: N. Amer.

POA (cont.)

<i>conferta</i>		56	Armstrong 1937	Fo	N. Europe
<i>nipponica</i>		42	Tateoka 1954	—	Japan
<i>bonariensis</i>		56	Moriya & K. 1949a	—	Argentina
<i>epilis</i>	Skyline B.G.	56	Saura 1948a	—	Argentina
		c. 84	Armstrong 1937	Fo	W: N. America
			Hartung 1946		
<i>arctica</i>		56	Flovik 1940		
		72-84, c. 100	L. & L. 1948	Fo	North Reg.
		38, 56, c. 68, 75	Nannfeldt 1940		
<i>ampla</i>	Big Bluegrass	62-100	Hartung 1946	Fo	W: N. America
<i>arida</i>	Plains B.G.	63-103	" "	Fo	C: U.S.A.
<i>fibrata</i>		63, 64	" "	—	California
<i>juncifolia</i>	Alkali B.G.	62-84	" "	Fo	W: N. America
<i>nervosa</i>		62-70	" "	Fo	" "
<i>nevadensis</i>		62-70	" "	Fo	W. & C: U.S.A.
<i>canbyi</i>		72-106	" "	Fo	N. America
<i>abbreviata</i>		76	Flovik 1940	Fo	Arctic
<i>secunda</i>		74-87	Hartung 1946	Fo	W. & C: N. Am., Chile
<i>gracillima</i>	Slender B.G.	81-86	" "	Fo	W: N. America
<i>granitica</i>		c. 80	Skalinska 1950a	—	C. Europe
<i>irrigata</i>		82-147	A. Löve 1952	Fo	Arctic
<i>subfastigiata</i>		91-97	Hartung 1946	Fo	Altai

PUCCINELLIA (GLYCERIA) $x = 7$

<i>lemmoni</i>		14	Church 1949	Fo	W: U.S.A.
<i>parishii</i>		14	" "	Fo	California
<i>vahlana</i>		14	Flovik 1940	Fo	Arctic
		14	Avdulov 1931		
<i>distans</i>		28	Pölya 1948	Fo	Temp.
		42	L. & L. 1948		
<i>fasciculata</i>		28	Rutland 1941	Fo	W. Europe
<i>phryganodes</i>		28	Flovik 1940	Fo	Arctic
		20	L. & L. 1948		
<i>angustata</i>		42	Flovik 1940	Fo	"
<i>retroflexa</i>		42	L. & L. 1948	—	Europe
<i>rupestris</i>		42	Rutland 1941	Fo	W. Eur., Syria
<i>paupercula (pumila)</i>		42, 56	Church 1949	Fo	N: N. America
<i>maritima</i>	Sea Poa	42, 56	" "	Fo	W. Eur., N. Am., Sakhalin
		63	Maude 1940		
		c. 70	Wulff 1937a		
<i>deschampsoides</i>		56	Bøcher & L. 1950	—	—
<i>laurentiana</i>		56	Church 1949	Fo	N.E: N. Amer.
<i>lucida</i>		56	" "	Fo	" "
<i>nuttalliana</i>		56	" "	Fo	N. America
<i>simplex</i>		56	" "	Fo	California

SESLERIA $x = 7$

<i>disticha</i>		14	Reese 1953	—	Europe
<i>autumnalis</i>		28	Avdulov 1928	Fo	S. Eur., Asia M.
<i>caerulea</i>		28	Kattermann 1930	Fo	Europe
<i>varia</i>		28	Ujhelyi & F. 1948	—	"
<i>tenuifolia</i>		42	Avdulov 1928	Fo	S. Europe
<i>sadleriana</i>		56	Ujhelyi & F. 1948	—	Hungary

ARCTOPHILA $x = 7$					
<i>fulva</i>	42	Flovik 1940	—		North Reg.
FLUMINEA (SCOLOCHLOA) $x = 7$					
<i>festucea</i>	{ 28	L. & L. 1944b	Fo		N. Temp.
	42	Church 1949			
PSEUDOBROMUS $x = 7$					
<i>africanus</i>	28	de Winter 1951b	—		E: S. Afr., mtns.
ANTHOCHLOA (NEOSTAPFIA) $x = 7$					
<i>colusana</i>	42	Church, Myers 1947	—		California
VASEYOCHLOA $x = 7$					
<i>multinervosa</i>	56	Brown 1950	—		Texas
PLEUROPOGON $x = 7, 8$					
<i>californicus</i>	14, 16	Church, Myers 1947	Fo		California
<i>davyi</i>	16	" " "	—		
<i>refractus</i>	16, 32	" " "	Fo		W: U.S.A.
BRACHYPODIUM $x = 7, 9, 15$					
<i>serpentinum</i>	14	K. Jones unpub.	—		Albania
<i>flexum</i>	18	P. T. Thomas unpub.	—		S. Africa
<i>sylvaticum</i>	False Brome	18 Ono & T. 1953	—		Eur., S.W. Asia
<i>phoenicoides</i>		28 Mimeur 1950	—		Medit.
<i>pinnatum</i>	Heath F. B.	28 L. & L. 1944b	—		Eur., N. Afr., N. Asia
<i>distachyon</i>	{ 28	Mimeur 1950	—		Medit.
	30	Avdulov 1931			
MUNROA $x = 8$					
<i>mendocina</i>	16	Covas 1949b	—		Chile
MELICA * $x = 9$					
<i>altissima</i>	18	Hunter 1934	Fo		S. Eur., N. Asia
<i>andina</i>	18	Covas 1945	—		S. America
<i>aristata</i>	& 5 spp.	18 Stebbins & L. 1941	Fo		W: U.S.A.
<i>bulbosa</i>	Onion grass & 6 spp.	18 Boyle 1945	Fo		W: N. America
<i>magnolii</i>		18 Lorenzo-Andreu 1951	—		Eur., N. Africa
<i>minuta</i>		18 Doulat, D. 1951	—		S. Eur., Persia
<i>nutans</i>	Mountain M.	18 Tateoka 1954	Fo		Eur., N. Asia
<i>onoei</i>		18 " "	—		Japan
<i>uniflora</i>	Wood Melic	18 L. & L. 1944b	—		Eur., S.W. Asia
<i>ciliata</i>	18, 30	Doulat, D. 1951	FoH		Eur., N. Afr., S.W. Asia
<i>amethystina</i>	36	" "	—		Medit.
<i>species</i>	36	Melland 1945*	Fo		Chile
MOLINIA $x = 9$					
<i>caerulea</i>	Flying Bent, Purple Melic	{ 18, 36 Mattick, T. 1950	—		Eur., N. Asia
		36, 90 Guinochet & L. 1950			
MOLINIOPSIS $x = ?$					
<i>japonica</i>	50	Tateoka 1954	—		Japan
DUPONTIA $x = 11$					
<i>fisheri</i>	44 + 1-3B	Flovik 1940	Fo		Arctic
<i>v. psilosantha</i>	88 + 0-1B	" "			

ORCUTTIA $x = 12, 13, 16$

<i>californica</i>	24	Church, Myers 1947	Fo	California
<i>greenii</i>	24	" " "	—	"
<i>tenuis</i>	26	" " "	—	"
<i>pilosa</i>	32	" " "	—	"

TRIBE XVII: AVENEAE

AIROPSIS $x = 4$

<i>tenella</i>	8	Litardière 1948c	—	W. Medit.
----------------	---	------------------	---	-----------

HOLCUS $x = 4, 7$

<i>gavanus</i>	8	Litardière 1949b	—	Spain, Portugal
<i>lanatus</i> Yorkshire Fog	14	" "	H	Eur., Temp. Asia
<i>mollis</i> Creeping Y. F.	14	Stählin 1929	—	Europe
	28	Litardière 1949b	—	
	28, 35, 42	Beddows & Jones '53	—	
	49	Jones unp.	—	

PERIBALLIA $x = 4, 7$

<i>laevis</i>	8	Litardière 1948c	—	Spain, Portugal
<i>involucrata</i>	14	" "	—	Spain

SCHISMUS $x = 6$

<i>calycinus</i>	12	Avdulov 1931	—	Morocco
------------------	----	--------------	---	---------

CORYNEPHORUS (AIRA) $x = 7$

<i>canescens</i> Grey Hair G.	14	Avdulov 1931	FoH	S. & W. Europe
<i>fasciculatus</i>	14	Gardé 1952b	—	Algeria

GAUDINIA $x = 7$

<i>fragilis</i>	14	Gardé 1952b	—	Medit.
-----------------	----	-------------	---	--------

SPHENOPHOLIS $x = 7$

<i>intermedia</i>	14	Nielsen & H. 1937	Fo	N. America
<i>obtusata</i> Prairie Wedgegrass	14	Brown 1950	Fo	"

VENTENATA $x = 7$

<i>macra</i>	14	Avdulov 1931	—	Asia M., Mesopot.
--------------	----	--------------	---	-------------------

AIRA $x = 7$

<i>caryophyllea</i> Silver Hair G.	14	Wulff 1937b	H	Eur., S.W. Asia, Abyssinia
<i>praecox</i> Early Hair G.	14	Hagerup 1939	—	Europe
<i>multiculmis</i>	28	" "	Fo	"

AVENA $x = 7$

<i>brevis</i> Short Oat	14	Spier 1934	Fo	Europe
	(28)	Dorsey 1939	—	
<i>bromoides</i>	14	Litardière 1950	—	S.W. Europe
<i>bruhsiana</i>	14	Emme 1930	—	Caspian
<i>clauda</i>	14	" "	—	Greece, Asia M., N. Africa
<i>decora</i>	14	Litardière 1950	—	Europe
<i>erianthus (pilosa)</i>	14	Emme 1930	—	Asia M., Syria, N. Africa
<i>hirtula</i>	14	Shepeleva 1939	—	S. Europe
<i>nudibrevis</i>	14	Stanton 1936	G	"

AVENA (cont.)

<i>sedensis (montana)</i>		14	Litardière 1950	—	Alps
<i>sempervirens</i>		14	" "	—	S. Europe
<i>ventricosa</i>		14	Emme 1930	Fo	Algeria
<i>wiestii</i>	Desert Oat	14	" "	Fo	Egypt, Persia
<i>strigosa</i>	Sand Oat	14 (21), 28	Nishiyama 1936	Fo	cult, Medit.
<i>abyssinica</i>	Abyss. Oat	28	Spier 1934	GFo	Abyssinia
<i>barbata</i>	Slender Wild O.	28	Huskins 1927	Fo	Medit., Persia
<i>vaviloviana</i>		28	Emme 1930	G	cult, Russia
<i>byzantina</i>	Red Oat	42	Huskins 1927	G	Eur., N. Asia
<i>chinensis (nuda)</i>	Ch. Naked O.	42	" "	G	cult, China
<i>fatua</i>	Wild Oat	42	Philp 1933a	GFoTo	S.W. Asia
<i>ludoviciana</i>	Wild Red Oat	42	Huskins 1927	G	Medit., S.W. Asia
<i>sterilis</i>	Animated Oat	42	Spier 1934	Fo	" "
<i>sativa</i>	Oat	42	Emme 1930	FoG	cult, Persia "
		(63)	Müntzing 1937c		
<i>planiculmis</i>		c. 126	Reese 1953	—	Eur., N. Asia

HELICTOTRICHON (AVENA) $x = 7$

<i>hideoi</i>		14	Tateoka 1954	—	Japan
<i>pubescens</i>	Downy Oat G.	{ 14, 16	L. & L. 1948 Kattermann, T. 1936	Fo	Eur., N. Asia
<i>pratense</i>	Meadow Oat G.	{ 14, 28, 42	Litardière 1950 Maude 1940	Fo	" "
<i>versicolor</i>		60-62	Kattermann, T. 1936	Fo	S. Europe

ARRHENATHERUM $x = 7$

<i>elatus</i>	Tall Oat G.	28	Avdulov 1931	Fo	Eur., N. Afr., W. Asia
<i>v. bulbosum</i>	Onion Couch	28	Rutland 1941		

TRISETUM (AVENA) $x = 7, 12?$

<i>sibiricum</i>		14	Avdulov 1931	Fo	O.W. Arctic
<i>flavescens</i>	Golden Oat G.	{ 24, 28	" " Nakajima 1930	Fo	N. Temp.
<i>bifidum</i>		28	Moriya & K. 1949a	—	Japan
<i>projectum</i>		28	Stebbins, Myers 1947	Fo	W: N. America
<i>spicatum</i>		28	Flovik 1938	Fo	Arctic & Alpine
<i>canescens</i>		42	Stebbins & L. 1941	Fo	W: N. America
<i>cernuum</i>		42	Myers 1947	Fo	" "

KOELERIA $x = 7$

<i>glauca</i>		14, 28	Bøcher 1943	Fo	Eur., N. Asia
<i>cristata</i>	June Grass	{ 14 + 2B, 28	Tateoka 1954 Stebbins & L. 1941	Fo	Temp. O.W.
<i>gracilis</i>	Slender Hair G.	28, 30	Maude 1940	Fo	Eur., N. Asia
<i>vallisiana</i>		42	" "	Fo	W. Eur., N. Afr.
<i>pyramidata (cristata)</i>		70, 84	Bøcher 1943	Fo	S. Europe

DESCHAMPSIA $x = 7, 13$ (High Polyploids Apomictic)

<i>atropurpurea</i>	Mtn. Hair G.	14	L. & L. 1948	Fo	North Reg.
<i>setacea</i>	Marsh Hair G.	14	Hagerup 1939	Fo	W. Europe
<i>arctica</i>		28	" "	Fo	N. Amer., Arctic
<i>bottnica</i>		28	" "	Fo	Temp.
<i>flexuosa</i>	Wavy H. G.	28	Tateoka 1954	FoH	N. Temp.
<i>pumila</i>		{ 28, 39	Hagerup 1939 Bøcher & L. 1950	Fo	Arctic

DESCHAMPSIA (cont.)

<i>caespitosa</i>	Tufted H. G.	{ 26	Lawrence 1945	Fo	Temp. & Arctic
		28	Hagerup 1939	Fo	
<i>danthonioides</i>		26	Myers 1947	Fo	W: N. Am., Chile
<i>elongata</i>	Slender H. G.	26	" "	Fo	N. Temp.
<i>holciformis</i>		26	" "	Fo	W: N. America
		26, 48, 52	L. & L. 1948		
<i>alpina</i>	Alpine H. G.	{ 39, 41, 49	Flovik 1940	—	Arctic
		52	Lawrence 1945		
		56	Hagerup 1939		

DANTHONIA x = 6, 7

x = 6

<i>curva</i>		12	de Wet 1954a	—	S. Africa
<i>disticha</i>		12	" "	—	"
<i>auriculata</i>		24	" "	—	Australia
<i>carphoides</i>		24	Myers 1947	—	"
<i>duttoniana</i>		24	de Wet 1954a	—	E. Australia
<i>forskalii</i>		24	" "	—	Egypt
<i>gracilis</i>		24	Calder 1937	Fo	New Zealand
<i>nigricans</i>		24	" "	Fo	" "
<i>purpurea</i>		24	de Wet 1954a	—	S. Africa
<i>setifolia</i>		24	Calder 1937	Fo	New Zealand
<i>pilosa</i>		{ 24	Myers 1947		
		48	Calder 1937	Fo	" "
<i>semiannularis</i>		{ 24	Myers 1947		
		48	Calder 1937	Fo	" "
<i>australis</i>		36	" "	Fo	" "
<i>californica</i>	Calif. Oat G.	36	de Wet 1954a	Fo	W. & C: N. Amer.
<i>chilensis</i>		36	" "	Fo	Chile
<i>compressa</i>		36	" "	Fo	E: N. America
<i>crassiuscula</i>		36	Calder 1937	Fo	New Zealand
<i>intermedia</i>		36	de Wet 1954a	Fo	W. & C: N. Amer.
<i>oreophila</i>		36	Calder 1937	Fo	New Zealand
<i>spicata</i>		36	de Wet 1954a	Fo	N. America
<i>stricta</i>		36	" "	—	S. Africa
<i>unispicata</i>		36	" "	Fo	W: N. America
<i>bipartita</i>		48	" "	—	Australia
<i>oresigena</i>		48	" "	—	S. Africa
<i>richardsonii</i>		48	" "	—	S.E. Australia
<i>buchanani</i>	Desert D.	c. 72	Calder 1937	Fo	New Zealand
x = 7					
<i>cunninghamii</i>		42	Calder 1937	Fo	New Zealand
<i>ovata</i>		42	" "	Fo	" "
<i>raoultii</i>	Red Tussock	42	" "	Fo	" "

PENTASCHISTIS x = 7

<i>thunbergii</i>		14	de Wet 1954a	—	S. Africa
-------------------	--	----	--------------	---	-----------

SIEGLINGIA x = 9

<i>decumbens</i>	Heath G.	{ 18	L. & L. 1944b	—	Eur., N. Afr., N. Asia
		36	Scheerer 1940		
		124	Maude 1940		

TRIBE XVIII: HORDEAE

AEGILOPS $x = 7$

(i) <i>mutica</i>	14	Kihara 1954	Fo	Asia Minor
(ii) <i>bicornis</i>	14	" "	Fo	Egypt, Palest.
<i>longissima</i>	14	" "	Fo	N.E. Egypt, Pal.
(incl. <i>sharonensis</i>)				
<i>speltoides</i> Goat Gr.	14	" "	Fo	Asia M., Syria,
(incl. <i>aucheri</i>)				Palestine
(iii) <i>comosa</i> (incl. <i>heldreichii</i>)	14	" "	Fo	Asia M., Greece
<i>uniaristata</i>	14	" "	Fo	Balkans
(iv) <i>caudata</i>	14	" "	Fo	Asia M., Greece
<i>cylindrica</i>	28	" "	Fo	E. Medit.—Afg.
(v) <i>squarrosa</i>	14	" "	Fo	Transcauc.—Afg.
<i>ventricosa</i>	28	" "	Fo	W. Medit.
<i>crassa</i>	28, 42	" "	Fo	Palest.—Persia
<i>juvenalis</i> (turcomanica)	42	" "	Fo	Transcasp.
(vi) <i>umbellulata</i>	14	" "	Fo	Asia M., Cauc.
<i>biuncialis</i>	28	" "	Fo	E. Medit.—Casp.
<i>columnaris</i>	28	" "	Fo	Asia Minor
<i>ovata</i>	28	" "	Fo	S. Eur., N. Afr.,
				S.W. Asia
<i>triuncialis</i> (incl. <i>persica</i>)	28	" "	Fo	S. Eur., Medit.—
				Persia
<i>variabilis</i> (incl. <i>kotschyi</i>)	28	" "	Fo	E. Medit.—Casp.
<i>triaristata</i>	28, 42	" "	Fo	S. Eur., Medit.—
				Casp.

HAYNALDIA $x = 7$

<i>villosa</i>	14	Kostoff 1936	Fo	Eur., S.W. Asia
----------------	----	--------------	----	-----------------

SECALE $x = 7$

<i>ancestrale</i>	14	Kostoff 1937	G	Anatolia
<i>vavilovii</i>	14	" "	G	Armenia
<i>kuprijanovii</i>	14	Nakajima 1954	G	Caucasus
<i>africanum</i> African Rye	14	Gouws 1950	Fo	N. Africa
	14 + 1B	Emme 1928		
<i>fragile</i> Hungarian R.	14 + 1-2B	" "	G	S.E. Eur., N. Asi
<i>montanum</i> Wild Rye	14 + 1-2B	" "	Fo	Medit.—C. Asia
	14 + 0-8B	Müntzing 1943a		
<i>cereale</i> Rye	(7) (21)	" 1937b, c	G	<i>cult</i> , Persia
	(28)	" 1951		

ELYMUS* $x = 7$

<i>caput-medusae</i>	14	Griffie 1927	Fo	Europe
<i>junceus</i>	14	Brown 1948	Fo	Kasakstan
<i>akmolinsensis</i>	28	Litardière 1947	—	N. Asia
<i>angustus</i>	28	" "	—	Siberia
<i>canadensis</i> & 6 spp.	28	Brown 1948, 1950	GFo	N. America
<i>glaucus</i> Blue Wild Rye	28	Stebbins & L. 1941	Fo	W: N. America
<i>mollis</i> Amer. Dune G.	28	Suzuka 1950a	GSb	N.E. Asia, N. Am.
<i>sibiricus</i>	28	Avdulov 1928	Fo	N. Asia
<i>villosus</i>	28	Nielsen & H. 1937	Fo	E. & C: U.S.A.
<i>virescens</i>	28	Hartung 1946	Fo	W: N. America
<i>dahuricus</i>	28	Brown 1948	Fo	N. Asia
	42	Avdulov 1928		
<i>triticoideus</i> Alkali Rye G.	28, 42	Stebbins & L. 1941	Fo	W: N. America
<i>cinereus</i> Giant W. R.	28, 56	" " "	Fo	N. America

ELYMUS (cont.)

<i>giganteus</i>		{ 28	Avdulov 1931	Fo	Siberia
		56	Brown 1948		
<i>erianthus</i>		42	Schnack & C. 1947	—	Chile
<i>patagonicus</i>		42	Hunziker 1955	Fo	S.W. Argentine
<i>arenarius</i>	Sea Lyme G.	56	S. & S. 1938	FoSbSu	Europe

HORDELYMUS $x = 7$

<i>europaeus</i>	Wood Barley	28	Wulff 1939b	Fo	Eur., Caucasus
	(<i>El. eur.</i> , <i>Hord. sylvaticum</i>)				

HORDEUM $x = 7$

<i>agriocrithon</i>		14	Aberg 1938	—	Tibet
<i>californicum</i> (<i>nodosum</i>)		14	Stebbins & L. 1941	—	California
<i>comosum</i>		14	Covas 1949a	—	Chile
<i>chilense</i>		14	Perak 1943	—	"
<i>compressum</i>		14	Covas 1950a	—	Argentine
<i>distichum</i>	Two-Rowed B.	14	Kagawa 1929	G	<i>cult</i>
<i>euclaston</i>		14	Andres 1941	—	N. America
<i>nudiramulosum</i>		14	Ghimpu 1929a	—	<i>cult</i>
<i>pavisi</i>		14	Litardière 1926	—	France
<i>pubiflorum</i>		14	Covas 1952	—	S: S. America
<i>spontaneum</i>	Wild Sprat B.	14	Aase & P. 1926	Fo	S.W. Asia
<i>stebbinsii</i>		14	Covas 1949a	—	Medit., N. & S. America
<i>stenostachys</i>		14	" 1950a	—	?
<i>thyrosoideum</i>		14	Ghimpu 1929a	—	<i>cult</i>
<i>bulbosum</i>		14, 28	Lein 1948	Fo	Medit.
<i>hystrix</i>		{ 14	Covas 1949a	Fo	"
		28	Chin 1941		
<i>jubatum</i>	Foxtail B.	{ 14	Tanzi 1925	—	N. & S. Amer.
		28	Aase & P. 1926		
<i>marinum</i>	Sea Barley	{ 14	Wulff 1937a	—	Eur., S.W. Asia
		28	Castro & F. 1946		
<i>murinum</i>	Wall B.	{ 14	Stolze 1925	—	Eur., N. Afr., S.W. Asia
		28	Aase & P. 1926		
<i>pusillum</i>	Wild Barley	{ 14	Kihara 1924	Fo	N. & S. Amer.
		28	Stählin 1929		
<i>vulgare</i>	Barley	{ 14	Kihara 1924	AG	<i>cult</i> , Abyssinia
		(28)	Karpechenko 1938		
<i>nodosum</i>	Meadow B.	{ 14, 28	Chin 1941	Fo	N. Temp.
		42	Griffie 1927		
<i>brachyantherum</i> (<i>nodosum</i>)		28	Covas 1952	Fo	W: N. America
<i>canadense</i>		28	Stählin 1929	—	<i>cult</i>
<i>depressum</i>		28	Covas 1949a	—	W: N. America
<i>gussoneanum</i>		28	Chin 1941	Fo	Sicily
<i>leporinum</i>		28	Covas 1952	—	Eur., N. Amer.
<i>lechleri</i>		42	Covas 1951	—	S. America
<i>hexaploidum</i>		42	" "	—	Argentine
<i>parodii</i>		42	" "	—	Patagonia

TRITICUM $x = 7$

<i>aegilopoides</i>	Wild Small S.W.	14	Darlington 1931c	—	Asia Minor
		14	" "	G	<i>cult</i> , relic
<i>monococcum</i>	Small Spelt W.	{ (7)	Smith 1946		
		(28)	Dorsey 1939		

TRITICUM (cont.)

<i>armeniacum</i>		28	Makushina 1938	—	Armenia
<i>dicoccoides</i>	Wild Emmer	28	Sachs 1953a	—	Syria
<i>dicoccum</i>	Emmer	28	Darlington 1931c	G	cult, relic
<i>durum</i>	Macaroni W.	28	Kihara 1936a	G	cult, N. Africa
		(56)	Dorsey 1936		
<i>uranicum</i>	Khorasan W.	28	Sachs 1953a	G	cult, Persia
(<i>orientale</i>)					
<i>persicum</i> (<i>carthlicum</i>)		28	" "	G	" "
<i>polonicum</i>	Polish W.	28	" "	G	cult, Medit.
		(56)	Dorsey 1936		
<i>pyramidale</i>	Cone Wheat	28	Lilienfeld & K. '34	G	cult, Egypt
<i>timopheevi</i>		28	Sachs 1953a	G	cult, Persia
<i>turgidum</i>	Rivet W.	28	Darlington 1931c	G	cult, Medit.
<i>compactum</i>	Club W.	42	Sachs 1953b	G	cult, Afghan.
<i>macha</i>		42	" "	G	cult, W. Georgia
<i>sphaerococcum</i>	Indian Dwarf W.	42	" "	G	cult, N.W. India
<i>spelta</i>	Large Spelt W.	42	" "	G	cult, relic
<i>vavilovianum</i>		42	" "	G	cult
<i>vulgare</i>	Bread Wheat	42	" "	G	cult
(<i>aestivum</i>)		(21) (63)	Y. Yamazaki '34, '37		
		(84)	Dorsey 1936		
<i>edwardi</i> (<i>durum</i> × <i>mon.</i>)		(42)	Zhebrak 1944	G	expt.
<i>soveticum</i> (<i>durum</i> × <i>timo.</i>)		(56)	" "	G	"
<i>borisovi</i> (<i>vulgare</i> × <i>timo.</i>)		(70)	" "	G	"

EREMOPYRON (AGROPYRON) $x = 7$

<i>prostratum</i>		14	Avdulov 1931	Fo	Eur., N. Asia
-------------------	--	----	--------------	----	---------------

AGROPYRON * $x = 7$

<i>elongatum</i>	Couch Grass	14	Simonet 1935	Sb	Europe
<i>gmelinii</i>	Wheat Grass	14	Avdulov 1931	Fo	E. Siberia
<i>velutinum</i>		14	Hair unp.	Fo	Australia
<i>crisatum</i>	Crested Wh. G.	14, 28	Hartung 1946	Fo	Eur., N. Asia
<i>spicatum</i>	Blue Bunch W. G.	14, 28	" "	Fo	N. America
<i>caespitosum</i>		14	Stebbins & P. 1953	—	S.W. Asia
<i>borealis</i>		28	Bøcher & L. 1950	—	Russia
<i>caninum</i>	Bearded W. G. & 8 spp.	28	Hartung 1946	Fo	Eur., N. Asia
<i>ciliare</i>		28	Nakajima 1936	—	
<i>donianum</i>		28	Bøcher & L. 1950	—	Scotland
<i>japonicum</i>		28	Nakajima 1936	—	Japan
<i>junceiforme</i>		28	Ostergren 1940	—	W. & N. Europe
<i>latiglume</i>	& 2 spp.	28	Senn <i>et al.</i> 1949	—	N: N. America
<i>mayebararum</i>		28	Moriya & K. 1949a	—	Japan
<i>partshii</i>		28	Stebbins <i>et al.</i> 1946	Fo	California
<i>scabrifolium</i>		28	Covas 1949b	—	Argentina
<i>sibiricum</i>	& 2 spp.	28	Avdulov 1930, 1931	Fo	Eur., N. Asia
<i>turczaninovii</i>		28	Ono & T. 1953	—	Turkestan
<i>violacea</i>		28	Bøcher & L. 1950	—	Scandinavia
<i>junceum</i>	Jointed Couch G.	28	Peto 1930	Sb	Europe
<i>v. mediterraneum</i>		42	Simonet 1935		
<i>repens</i>	Couch Grass	28, 42	Avdulov 1931	FoM	Eurasia
<i>semicostatum</i>		{ 28	Nielsen & H. 1937	Fo	C. Asia
		{ 42	Nakajima 1936		

AGROPYRON (cont.)

<i>smithii</i>	Bluestem	{ 28, 56	Hartung 1946	Fo	N. America
		42	Stebbins, Myers 1947		
<i>acutum</i> (<i>junceiforme</i> × <i>pungens</i>)		35	Simonet 1934c	Fo	Europe
<i>duvalii</i>		35, 42	" 1935	Fo	<i>cult.</i> , France
<i>agroelymoides</i>		42	Hunziker 1955	Fo	C. Argentine
<i>enysii</i>		42	Hair unp.	Fo	New Zealand
<i>intermedium</i> (<i>glaucum</i>)		42, 43	Hartung 1946	Fo	Europe
<i>kirkii</i>		42	Hair unp.	Fo	New Zealand
<i>littorale</i>		42	Simonet 1935	Sb	Europe
<i>obtusiusculum</i>		42	Peto 1930	Fo	N.W. Europe
<i>pungens</i>		42	Senn <i>et al.</i> 1949	Sb	Europe
<i>racemiferum</i>		42	Nakajima 1936	—	Japan
<i>trichophorum</i>		42	Hartung 1946	Fo	Europe
<i>scabrum</i>		(sexual) 42	Hair unp.	Fo	Austr., N.Z.
		(apo.) 41–84	" "		
<i>v. tenue</i>		56	" "	Fo	New Zealand
<i>tallonii</i>		49	Simonet 1935	Fo	<i>cult.</i> , France
<i>campestre</i>		56	" "	—	Europe
<i>caespitosum</i>	Couch Grass	70	Peto 1936	Sb	Armenia
HORDEOPYRUM $x = 7$					
<i>rouxii</i>		49	Simonet 1954	—	W. Medit.
	(<i>H. secalinum</i> × <i>A. littorale</i>)				(<i>nat. hybrid</i>)
SITANION $x = 7$					
<i>hanseni</i>		28	Stebbins & L. 1941	Fo	W: U.S.A.
<i>hystrix</i>	Squirreltail	28	" " "	Fo	W. & C: U.S.A., Mex.
<i>jubatum</i>		28	" " "	Fo	W: U.S.A.
HYSTRIX $x = 7$					
<i>patula</i>	Bottlebrush	28	Brown 1948	FoH	E: N. America
<i>californica</i>		56	Stebbins, Myers 1947	—	California
AEGILOTRICUM $x = 7$					
<i>Ae. ovata</i> × <i>Tr. turgidum</i>		(46)	Percival 1936	G	<i>expt.</i>
<i>Ae. squarrosa</i> , etc. × <i>Tr. di-</i>		(42)	McFadden & S. '46,	—	"
<i>coccoides</i> , etc.			'47		
TRITICALE $x = 7$					
<i>Tr. vulgare</i> × <i>S. cereale</i>		(56)	Müntzing 1939	G	<i>expt.</i>
AGROTTRITICUM $x = 7$					
<i>Tr. vulgare</i> × <i>Agr. glaucum</i> , etc.		(42)	Tzitzin 1933	Fo	<i>expt.</i>
Other intergeneric hybrids			Sears 1948	—	<i>expt.</i>

TRIBE XIX: STIPEAE

MILIUM $x = 4, 9, 14$					
<i>scabrum</i>		8	Tutin 1950	—	W. Eur., Medit., W. Asia
<i>vernale</i>	Early Millet	18	Avdulov 1928	Fo	Medit.
<i>effusum</i>	Wood Millet	28	L. & L. 1944b	—	N. Temp.

STIPA * $x = 9, 10, 11, 12, 14, 16, 17$

$x = 7, 13$

<i>leucotricha</i>	Texas N. G.	{ 26	Brown 1949	—	S.W: U.S.A.,
		28	Love, Myers 1947	—	Mexico
<i>neesiana</i>		28	Myers 1947	—	S. America
<i>parviflora</i>		28	Lorenzo-Andreu 1951	—	Medit.
<i>pringlei</i>		42	Love, Myers 1947	—	S.W: U.S.A.,
					Mexico
$x = 8, 9, 17$					
<i>pinetorum</i>		32	Myers 1947	—	W: U.S.A.
<i>tenuissima</i>		32	Brown 1951	—	Tex.—Mex., Arg.
<i>webberi</i>		32	Johnson 1945	—	N. America
<i>robusta</i>	Sleepy Grass	64	Love, Myers 1947	D	S.W: U.S.A.,
					Mexico
<i>pulchra</i>	Nodding N.	{ 64	Love 1954	Fo	California
		66	Nielsen 1939		
<i>lepida</i>	Foothill Needlegrass	34	Love 1954	Fo	California
<i>megapotomica</i>		34	Myers 1947	—	Brazil
<i>thurberiana</i>		34	Stebbins & L. 1941	Fo	W: U.S.A.
<i>lemmoni</i>		34, 36	" " "	Fo	"
<i>lettermani</i>		{ 66	" " "	Fo	W. & C: U.S.A.
		68	Love, Myers 1947		
<i>speciosa</i>	Desert N.	{ 68	" " "	Fo	Calif., Chile
		60	Stebbins & L. 1941		
<i>californica</i>	Cal. Needlegrass	36	" " "	Fo	W: U.S.A.
<i>elmeri</i>		36	" " "	Fo	W: N. America
<i>mucronata</i>		36	Love, Myers 1947	—	Mexico
<i>occidentalis</i>	Western N.	36	Stebbins & L. 1941	Fo	W: N. America
<i>philippii</i>		36	Myers 1947	—	Chile
$x = 10, 11$					
<i>coronata</i>		40	Stebbins & L. 1941	Fo	California
<i>stillmanii</i>		40	Myers 1947	—	"
<i>cernua</i>		70	Love 1954	Fo	"
<i>latiglumis</i>		70	Pohl 1954	Fo	"
<i>brachychaeta</i>		{ 40	Saura 1943		
		44	Parodi 1946	Fo	Argentina
		44-46	Myers 1947		
<i>capillata</i>	& 6 spp.	44	Avdulov 1931	Fo	S. Eur., N. Asia
<i>columbiana</i>		44	Nielsen 1939	Fo	W: N. America
<i>comechingoniana</i>		44	Saura 1948a	—	
<i>gynerioides</i>		44	Covas 1945	—	Mexico
<i>ichu</i>		44	Saura 1948a	—	"
<i>junceae</i>		44	Love, Myers 1947	—	Medit.
<i>neomexicana</i>		44	" " "	Fo	S.W: U.S.A.
<i>plumosa</i>		44	Covas & B. 1945	—	Chile
<i>comata</i>	Needle & Thread G.	{ 44-46	Stebbins & L. 1941	Fo	N. America
		46	Love, Myers 1947		
<i>humilis</i>		{ 42-44	Stebbins, Myers 1947	—	S. America
		66	Covas & B. 1945		
<i>neaei</i>		66	" " "	—	Patagonia
<i>speciosa</i>		66	" " "	Fo	Calif., Chile

STIPA (cont.)

<i>x</i> = 12, 13					
<i>sibirica</i>	Sleepy Grass	24	Avdulov 1928	Fo	N. Asia, Himal.
<i>extremiorientalis</i>		24	Ono & T. 1953	Fo	Japan
<i>eminens</i>		46	Love, Myers 1947	Fo	Tex., Ariz., Mex.
<i>spartea</i>	Porcupine G.	46	" " "	Fo	N. America
<i>splendens</i>		48	" " "	—	Siberia
<i>viridula</i>		82	Johnson & R. 1943	Fo	C: U.S.A.

BRACHYELYTRUM *x* = 11

<i>erectum</i>		22	Brown 1950	—	E: N. America
----------------	--	----	------------	---	---------------

PIPTOCHAETIUM * *x* = 11

<i>bicolor</i>		22	Covas & B. 1945	—	Chile
<i>lasianthum</i>	& 3 spp.	22	Parodi 1946	—	Argentine
<i>napostaense</i>		22	Covas & B. 1945	—	"
<i>fimbriatum</i>		44	Brown 1951	Fo	S.W: U.S.A.

ORYZOPSIS *x* = 11, 12. *x*₂ = 23

<i>kingii</i>		22	Johnson 1945	Fo	California
<i>micrantha</i>		22	" "	Fo	W. & C: N. Amer.
<i>pungens</i>		22	" "	—	N. America
<i>holciformis</i>		24	" "	—	Persia
<i>millacea</i>		24	Avdulov 1928	Fo	Medit.
<i>paradoxa</i>		24	Litardière 1950	Fo	Eur., Cauc.
<i>virescens</i>		24	Avdulov 1928	Fo	" "
<i>hymenoides</i>	Indian Rice G.	48	Johnson 1945	FoG	N. America
<i>asperifolia</i>		46	" "	—	
<i>racemosa</i>		46	" "	—	E. & C: N. Amer.

STIPORYZOPSIS *x* = (24 + 41)

<i>caduca</i>		65	Johnson & R. 1943	Fo	<i>nat. hybrid</i>
(<i>O. hym.</i> × <i>S. vir.</i>)					
Mandan Rice Grass		130	Nielsen & R. 1952	Fo	" "
(<i>S. caduca</i> 4 <i>x</i>)					

PHAENOSPERMA *x* = 12

<i>globosa</i>		24	Avdulov 1931	Fo?	China
----------------	--	----	--------------	-----	-------

URACHNE (NASELLA) *x* = 19

<i>trichotoma</i>		38	Avdulov 1928	Fo	Temp. S. Amer.
-------------------	--	----	--------------	----	----------------

TRIBE XX: ORYZEAE

CHIKUSICHLOA *x* = 12

<i>aquatica</i>		24	Hirayoshi 1937	Fo	Japan
-----------------	--	----	----------------	----	-------

HYDROCHLOA *x* = 12

<i>carolinensis</i>		24	Brown 1948	Fo	S.E: U.S.A.
---------------------	--	----	------------	----	-------------

HYGRORYZA *x* = 12

<i>aristata</i>		24	Hirayoshi 1937	Fo	Trop. Asia
-----------------	--	----	----------------	----	------------

POTAMOPHILA *x* = 12

<i>prehensilis</i>		24	Winter 1951a	—	Australia
--------------------	--	----	--------------	---	-----------

ZIZANIOPSIS $x = 12$

millacea Southern Wild Rice 24 Brown 1948 — S.E: U.S.A., W.I.

EHRHARTA $x = 12$

erecta { 24 Parthasarathy 1939 Fo S. Africa
48 Nakamori 1933
calycina Veldt Grass { 24 (25-28) Love 1948 Fo "
48 Parthasarathy 1939 Fo "
longiflora 48 " " Fo "

ORYZA $x = 12$

australiensis 24 Sampath & R. 1949 — Queensland
barthii Afr. Per. W.R. { 24 Heyn 1936 FoG Trop. Africa
36 P. T. Thomas unp.
brachyantha 24 Krishnaswamy *et al.* '54 — Sudan
breviligulata 24 " " — "
granulata 24 " " — India, Mal.
formosana 24 Hara 1942 — Formosa
glaberrima 24 Ramanujam 1938 FoG Trop. Africa
longistaminata 24 — " "
meyeriana 24 Heyn 1936, E.K.J.* Fo Trop. Asia
officinalis Wild Rice 24 Nandi 1936 Fo " "
perennis Cuban Rice 24 Gotoh & O. 1933 G Trop. America
stapfi 24 Sampath & R. 1949 G Trop. Africa
subulata 24 Saura 1948a — S. America
latifolia { 24 Heyn 1936 FoG N. Amer., W.I.
(48) Gotoh & O. 1933
sativa Rice { 24 Avdulov 1931 AFoG cult, India
(36, 48) Ichijima 1934
coarctata Wild Sind R. 48 Parthasarathy 1938 Fo Sind, Bengal, Bur.
eichingeri 48 Pathak 1940 Fo Trop. E. Africa
minuta 48 Nandi 1936 G Philippines
sylvestris 48 Pathak 1940 — Trop. Africa

MICROLAENA $x = 12$

stipoides 48 Parthasarathy 1939 Fo Austr., N.Z.

LEERSIA $x = 12$

hexandra Bareet G. 48 Brown 1948 Fo Tropics
lenticularis Catchfly G. 48 " 1950 — E: U.S.A.
monandra 48 " " — S.E: U.S.A., W.I.
virginica White grass 48 " 1948 — E. & C: N. Amer.
oryzoides Cut G. 48 Tateoka 1954 Fo N. Temp.
v. japonica 60 Hirayoshi 1937 Fo Japan
japonica 96 " " — "

ZIZANIA $x = 15$

aquatica Annual Wild R. 30 Brown 1948 G E. & C: U.S.A.
latifolia Manchurian W.R. { 30 Ramanujam 1938 GV N. China
34? Hirayoshi 1937
texana Texas W.R. 30 Brown 1950 — Texas

TRIBE XXI: ARUNDINEAE

PHRAGMITES $x = 12$

<i>communis</i>	{ 36	Tischler 1942		
	48, c. 96	Avdulov 1931	DTToV	Cosmop.
as <i>karka</i>	48	Saura 1948a		
<i>japonica</i>	36	Ramanathan 1950		
	48	Tateoka 1954	—	Japan

CORTADERIA (GYNERIUM) $x = 12$

<i>selloana</i> Pampas Gr.	{ 72 + 1B	Avdulov 1931	HT	S. America
(<i>argentea</i>)	76	Hunter 1934		

ARUNDO $x = 12?$

<i>donax</i> Spanish Reed	110	Hunter 1934	HT	Medit.—Japan
---------------------------	-----	-------------	----	--------------

HAKONECHLOA $x = 12?$

<i>macra</i>	50	M. & S. 1935	H	Japan
--------------	----	--------------	---	-------

AMPELODESMOS $x = 12$

<i>mauritanicus</i>	96	Myers 1947	Fo	W. Medit.
---------------------	----	------------	----	-----------

TRIBE XXII: CENTOTHECEAE

CENTOTHECA $x = 12$

<i>lappacea</i>	24	Avdulov 1931	Fo	O.W. Tropics
-----------------	----	--------------	----	--------------

UNIOLA $x = 12$

<i>laxa</i>	24	Brown 1950	—	E: U.S.A.
<i>sessiliflora</i>	24	" "	—	S.E: U.S.A.
<i>latifolia</i>	48	" "	H	E: U.S.A.

TRIBE XXIII: BAMBUSEAE

ARUNDINARIA (SASAELLA) $x = 12$

<i>iwatekensis</i>	48	Uchikawa 1935	HTW	Japan
<i>simonii</i>	48	Parodi 1946	—	China

CHIMONOBAMBUSA $x = 12$

<i>marmorea</i>	48	Uchikawa 1933	HTW	China
-----------------	----	---------------	-----	-------

INDOCALAMUS $x = 12$

<i>wightianus</i> Nilgiri Bamboo	48	E.K.J.*	HTW	India
----------------------------------	----	---------	-----	-------

PHYLLOSTACHYS $x = 12$

<i>aurea</i> Golden B. & 4 spp.	48	Uchikawa 1935	HW	China, Japan
<i>striata</i>	48	" 1943	—	Japan
<i>marliacea</i>	{ 48	" "	—	"
	c. 72	Avdulov 1928		
<i>flexuosa</i>	54?	Hunter 1934	—	China

PLEIOBLASTUS (ARUNDINARIA) $x = 12$

<i>fortunei</i>	48	Hunter 1934	H	Japan
<i>gramineus</i>	48	Uchikawa 1935	—	"
<i>hindsii</i>	48	" "	H	Hong Kong
<i>higoensis</i>	48	" 1943	—	Japan
<i>communis</i>	48	" "	—	"

PLEIOBLASTUS (ARUNDINARIA) (cont.)

<i>chino (maximowiczii)</i>	48	Tateoka 1954	H	China
<i>simonii</i> Silverstripe B.	48	Uchikawa 1933	HW	"
<i>pygmaeus</i>	54?	Hunter 1934	H	Japan

PSEUDOSASA $x = 12$

<i>japonica</i> Arrow B.	48	Uchikawa '35, E.K.J.* TW		Japan
--------------------------	----	--------------------------	--	-------

SASA $x = 12$

sp. (3x)	36	Uchikawa 1943	—	
<i>kozasa</i>	48	Yamaura 1933	HW	Japan
<i>kurilensis</i>	48	" "	HW	"
<i>paniculata</i>	48	" "	HW	"

SASAMORPHA $x = 12$

<i>purpurascens (borealis)</i>	48	Tateoka 1954	HW	Japan
--------------------------------	----	--------------	----	-------

SEMIARUNDINARIA $x = 12$

<i>yashadake</i>	48	Uchikawa 1935	W	Japan
------------------	----	---------------	---	-------

SINO BAMBUSA $x = 12$

<i>tootsik</i>	48	Uchikawa 1933	W	Japan
----------------	----	---------------	---	-------

TETRAGONOCALAMUS (CHIMONOBAMBUSA) $x = 12$

<i>angulatus</i>	48	Uchikawa 1935	HTW	China
------------------	----	---------------	-----	-------

BAMBUSA $x = 12$

<i>bambos</i> Common B.	{	72 Janaki Ammal 1938	FoGHW	E. Indies
(<i>arundinacea</i>)		70 Parthasarathy 1946		
<i>floribunda</i>		72 Uchikawa 1935	W	Java
<i>multiplax</i> Henge B.		72 " "	FoHW	Trop. Asia
as <i>nana</i>		72 Yamaura 1933	H	Japan
<i>polymorpha</i>		72 E.K.J.*	W	Burma
<i>vulgaris</i> Feather B.		72 "	FoHW	Trop. Asia

DENDROCALAMUS $x = 12$

<i>giganteus</i> Giant Bamboo	72	E.K.J.*	HToW	Burma
<i>longispathus</i>	72	"	W	"
<i>strictus</i> Male B.	{	72 Richharia & K. '40,	HToW	India, Java
		70 Parthasarathy 1946		
<i>brandisii</i>	72 + 2B	E.K.J.*	W	Burma

OCHLANDRA $x = 12?$

<i>scriptoria</i>	c. 72	E.K.J.*	TToW	India
<i>travancoria</i>	c. 72	"	TToW	S. India

BIBLIOGRAPHY

ABBREVIATIONS

Cytologia, F.J.N.: *Fujii Jubilee Number* (1937).

P.N.A.S.: *Proceedings of National Academy of Sciences*, Washington.

Z.i.A.V.: *Zeitschrift für induktive Abstammungs-und Vererbungslehre*.

* References to Chromosome Lists. See also p. x

- AASE, H. C. & POWERS, L. R. 1926. *Amer. J. Bot.* 13, 367.
 ABELE, K. 1923. *Acta Univ. latv.* 8, 371.
 ABERG, E. 1938. *Chron. bot.* 4, 390.
 ABRAHAM, A. 1939. *Ann. Bot., Lond.* n.s. 3, 545.
 — 1942. *Curr. Sci.* 11, 282.
 ADATI, S. 1933. *Cytologia*, 4, 182.
 — 1935. *Bot. & Zool., Tokyo*, 3, 1445.
 ADATIA, R. D. & CHOKSHI, D. B. 1951. *Curr. Sci.* 20, 102.
 AFZELIUS, K. 1924. *Acta Hort. berg.* 8, 123.
 — 1943. *Svensk bot. Tidskr.* 37, 266.
 — 1949. *Acta Hort. berg.* 15, 65.
 AGHARKAR, S. P. & BHADURI, P. N. 1935. *Curr. Sci.* 3, 615.
 AISHIMA, T. 1934. *Bot. Mag. Tokyo*, 48, 150.
 AKEMINE, T. 1935. *J. Fac. Sci. Hokkaido Univ.* 5, 25.
 ÅKERBERG, E. 1942. *Hereditas, Lund*, 28, 1.
 ALAM, Z. 1936. *Ann. Bot., Lond.* 50, 85.
 ALESKOWSKY, M. K. 1930. *Zitologii roda Statice*, p. 374.
 ALLARD, H. A. & ALLARD, H. F. 1940. *J. Wash. Acad. Sci.* 30, 335.
 ALMEIDA, J. L. F. DE. 1946. *Bol. Soc. Brot.* 20, 201.
 — 1947a. *Agron. lusit.* 9, 129.
 — 1947b. *Agron. lusit.* 9, 265.
 — 1948. *Agron. lusit.* 10, 263.
 AMANO, Y. 1944. *J. Fac. Sci. Hokkaido Univ.* 5, 109.
 AMICO, A. 1947. *Nuovo G. bot. ital.* 54, 748.
 ANDERSON, E. 1931. *Ann. Mo. bot. Gdn.* 18, 465.
 — 1936. *Ann. Mo. bot. Gdn.* 23, 457.
 ANDERSON, E. & SAX, K. 1935. *J. Arnold Arbor.* 16, 40.
 — 1936. *Bot. Gaz.* 97, 433.
 ANDERSON, E. & WHITAKER, T. W. 1934. *J. Arnold Arbor.* 15, 28.
 ANDERSSON, A. 1931. *Acta Univ. lund.* 27, (7).
 ANDREAS, C. H. 1947. *Nederl. kruidk. Arch.* 54, 138.
 ANDRES, J. M. 1941. *Rev. Fac. Agron. B. Aires*, 9, 100.
 ANDRES, J. M. & SAURA, F. 1945. *Rev. Fac. Agron. B. Aires (Inst. genet.)*, 2, 161.
 ANNEN, E. 1945. *Ber. schweiz. bot. Ges.* 55, 81.
 ARARATIAN, A. G. 1939. *C.R. Acad. Sci. U.R.S.S.* 25, 777.
 ARARATIAN, A. G. and TONIAN, C. R. 1945. *Proc. Acad. Sci. Armen. S.S.R.* 2, 141.
 ARATA, M. 1944. *Nuovo G. bot. ital.* 51, 39.
 ARENKOVA, D. N. 1940. *C.R. Acad. Sci. U.R.S.S.* 29, 332.
 ARMAND, L. 1912. *C.R. Acad. Sci., Paris*, 155, 1534.
 ARMSTRONG, J. M. 1937. *Canad. J. Res.* § C, 15, 281.
 ASANA, J. J. & ADATIA, R. D. 1945. *Curr. Sci.* 14, 74.
 ATCHISON, E. 1947a. *J. Hered.* 38, 311.

- *ATCHISON, E. 1947b. *Amer. J. Bot.* 34, 159.
 — 1947c. *Amer. J. Bot.* 34, 407.
 — 1948. *Amer. J. Bot.* 35, 651.
 * — 1949a. *J. Elisha Mitchell Sci. Soc.* 65, 118.
 — 1949b. *Amer. J. Bot.* 36, 364.
 — 1950. *J. Elisha Mitchell Sci. Soc.* 66, 70.
 — 1951. *Amer. J. Bot.* 38, 538.
 ATCHISON, E., MOORE, H. E. & WOOD, C. E. 1949. *Science*, 110, 41.
 ATWOOD, S. 1936. *Amer. J. Bot.* 23, 674.
 — 1937. *Cellule*, 46, 389.
 ATWOOD, S. S. & HILL, H. D. 1940. *Amer. J. Bot.* 27, 730.
 AVANZI, M. G. 1948. *Caryologia*, 1, 83.
 — 1949. *Caryologia*, 2, 111.
 AVDULOV, N. P. 1928. *Dnevn. Weecojušn. Ssed. Bot.* 1.
 * — 1931. *Bull. appl. Bot. Genet. etc.*, Suppl. 43.
 — 1933. *Bull. appl. Bot. Genet. etc.*, Ser. 2, 2, 131.
 AVDULOV, N. P. & TITOVA, N. 1933. *Bull. appl. Bot. Genet. etc.*, Ser. 2, 2, 165.
 AVERS, C. J. 1953. *Amer. J. Bot.* 40, 669.
 AYYANGAR RANGASWAMI, G. N. & KRISHNASWAMY, N. 1933. *Indian J. agric. Sci.* 3, 934.
 — — 1935. *Curr. Sci.* 4, 739.
- BABCOCK, E. B. 1915. *P.N.A.S.* 1, 535.
 * — 1947. *Univ. Calif. Publ. Bot.* 21, 1.
 — 1951. *Univ. Calif. Publ. Bot.* 23, 283.
 BABCOCK, E. B., STEBBINS, G. & JENKINS, J. A. 1937. *Cytologia, F.J.N.* 188.
 BABU, C. N. 1936. *Curr. Sci.* 4, 739.
 BACCHI, O. 1940. *J. Agron. S. Paulo*, 3, 249.
 BAEZ-MAJOR, A. 1934. *Cavanillesia*, 6, 59.
 BAILEY, P. C. 1951. *Bull. Torrey bot. Cl.* 78, 324.
 BALDWIN, J. T. 1935. *Bot. Gaz.* 96, 558.
 — 1936. *J. Genet.* 33, 455.
 — 1937. *Amer. J. Bot.* 24, 126.
 — 1938. *Amer. J. Bot.* 25, 572.
 — 1939. *J. Hered.* 30, 169.
 — 1940. *Madroño*, 5, 184.
 — 1941a. *J. Hered.* 32, 249.
 — 1941b. *Bull. Torrey bot. Cl.* 68, 615.
 — 1942a. *Bull. Torrey bot. Cl.* 69, 134.
 — 1942b. *Amer. J. Bot.* 29, 283.
 — 1943. *Bull. Torrey bot. Cl.* 70, 26.
 — 1945. *Bull. Torrey bot. Cl.* 72, 367.
 — 1946a. *Bull. Torrey bot. Cl.* 73, 18.
 — 1946b. *Bull. Torrey bot. Cl.* 73, 282.
 — 1947a. *J. Hered.* 38, 54.
 — 1947b. *Amer. J. Bot.* 34, 261.
- BALDWIN, J. T. & CAMPBELL, J. M. 1940. *Amer. J. Bot.* 27, 915.
 BALDWIN, J. T. & CULP, R. 1941. *Amer. J. Bot.* 28, 942.
 BALDWIN, J. T. & SPEESE, B. M. 1947a. *Bull. Torrey bot. Cl.* 74, 250.
 — — 1947b. *Bull. Torrey bot. Cl.* 74, 283.
 — — 1949a. *Bull. Torrey bot. Cl.* 76, 213.
 — — 1949b. *Bull. Torrey bot. Cl.* 76, 346.
 — — 1951a. *Bull. Torrey bot. Cl.* 78, 70.
 — — 1951b. *Bull. Torrey bot. Cl.* 78, 254.
 — — 1951c. *Amer. J. Bot.* 38, 153.
 — — 1951d. *Bull. Torrey bot. Cl.* 78, 161.
 — — 1951e. *Rhodora*, 53, 89.
 — — 1952. *Bull. Torrey bot. Cl.* 79, 293.
- BALDWIN, J. T. & SPEESE, B. M. 1955a. *Amer. J. Bot.* 42, 123.
 — — 1955b. *Amer. J. Bot.* 42, 406.

- BALDWIN, J. T., SPEESE, B. M. & MIKULA, B. 1949. *Rhodora*, **51**, 368.
- BAMBACIONE, V. M. 1940. *Sci. genet.* **1**, 326.
- 1941. *Ann. di Bot.* **22**, 99.
- BAMFORD, R. 1935. *J. Agric. Res.* **51**, 945.
- 1941. *J. Hered.* **32**, 419.
- BAMFORD, R. & WINKLER, F. B. 1941. *J. Hered.* **32**, 278.
- BANACH, E. 1950. *Bull. Acad. Polon. Sci. Lett.* § B, **1**, 197.
- BANACH-POGAN, E. 1954. *Acta Soc. bot. Polon.* **23**, 375.
- BANERJI, E. A. R. 1936. *Sci. & Cult.* **1**, 653.
- BANERJI, I. 1932. *J. Indian bot. Soc.* **11**, 82.
- 1950a. *Curr. Sci.* **19**, 347.
- 1950b. *Proc. 37th Indian Sci. Congr.* pt. 3, 44.
- 1951. *Proc. Indian Acad. Sci.* § B, **34**, 172.
- BANERJI, I. & HAKIM, A. 1954. *Proc. Indian Acad. Sci.* § B **39**, 128.
- BANERJI, I. & HALDAR, S. 1942. *Proc. Indian Acad. Sci.* § B, **16**, 91.
- BANGHAM, W. 1929. *J. Arnold Arbor.* **10**, 167.
- BARANOV, P. & PODDUBNAJA, U. 1925. *Bull. Univ. Asie cent.* **11**, 1.
- BARBER, H. N. 1941a. *Nature*, **148**, 227.
- 1941b. *Ann. Bot., Lond.* **5**, 375.
- 1942. *J. Genet.* **43**, 97.
- BARDUCCI, T. B. & MADOO, R. M. 1941. *Min. Fomento, Ecuador, Bol.* **22**.
- BARNARD, C. 1949. *Austr. J. sci. Res. Ser. B*, **2**, 241.
- BARTON, D. W. 1950. *Amer. J. Bot.* **37**, 639.
- BATTAGLIA, E. 1940. *Nuovo G. bot. ital.* **47**, 271.
- 1946. *Nuovo G. bot. ital.* **53**, 707.
- 1947a. *R.C. Accad. Lincei, Ser. 8*, **2**, 63.
- 1947b. *Nuovo G. bot. ital.* **54**, 560.
- 1947c. *R. C. Accad. Lincei, Ser. 8A*, **2**, 463.
- 1948. *Caryologia*, **1**, 1.
- 1949a. *Caryologia*, **1**, 144.
- 1949b. *Caryologia*, **1**, 269.
- 1949c. *Caryologia*, **2**, 85.
- 1949d. *Caryologia*, **2**, 23.
- 1950a. *Caryologia*, **2**, 165.
- 1950b. *Caryologia*, **3**, 126.
- 1951. *Bot. Gaz.* **112**, 490.
- 1952a. *Caryologia*, **5**, 113.
- 1952b. *Atti Soc. tosc. Sci. nat.* § B, **49**, 130.
- 1953. *Caryologia*, **5**, 237.
- 1954. *Caryologia*, **6**, 63.
- BAUR, E. 1932. *Züchter*, **4**, 57.
- BAYLIS, G. T. S. 1954. *Trans. roy. Soc. N.Z.* **82**, 639.
- BEADLE, G. W. 1930. *Cornell Univ. Agr. Exp. St.* **12**, 9.
- BEAL, J. M. 1932. *Bot. Gaz.* **93**, 278.
- 1937. *Bot. Gaz.* **99**, 400.
- 1942. *Bot. Gaz.* **103**, 617.
- BEAL, J. M. & OWNBAY, M. 1943. *Bot. Gaz.* **104**, 553.
- BEALE, G. H. 1940. *J. Genet.* **40**, 337.
- BEARD, E. C. 1937. *Bot. Gaz.* **99**, 1.
- BEASLEY, J. O. 1940. *J. Hered.* **31**, 39.
- 1942. *Genetics*, **27**, 25.
- BEATUS, R. 1936. *Z.I.A.V.* **71**, 353.
- BECK, C. 1953. *Fritillaries*, London.
- BECK, P. & HORTON, J. S. 1932. *Bot. Gaz.* **93**, 42.
- BEDDOWS, A. R. & JONES, K. 1953. *Nature*, **171**, 938.
- BEETLE, A. A. 1945. *Bull. Torrey bot. Cl.* **72**, 541.
- BEETLE, D. E. 1944. *Madroño*, **7**, 133.
- BEHRE, K. 1929. *Planta*, **7**, 208.

- BELL, C. R. 1949. *J. Elisha Mitchell Sci. Soc.* **65**, 138.
 — 1954. *Univ. Calif. Publ. Bot.* **27**, 133.
 BELLING, J. 1926. *Biol. Bull., Wood's Hole*, **50**, 160.
 BENOIST, E. 1937. *Rev. Cytol., Paris*, **2**, 415.
 BERG, H. D. VON. 1933. *Anz. Akad. Wiss., Vienna*, **70**, 276.
 BERGMAN, B. 1932. *Svensk bot. Tidskr.* **26**, 453.
 — 1935b. *Hereditas*, **20**, 214.
 — 1935c. *Svensk bot. Tidskr.* **29**, 155.
 — 1937. *Svensk bot. Tidskr.* **31**, 391.
 — 1941. *Svensk bot. Tidskr.* **35**, 1.
 — 1942. *Svensk bot. Tidskr.* **36**, 429.
 — 1944. *Svensk bot. Tidskr.* **38**, 240.
 — 1952. *Hereditas*, **38**, 367.
 BERGNER, A. D. 1943. *Amer. J. Bot.* **30**, 431.
 BERNSTRÖM, P. 1944. *Hereditas*, **30**, 257.
 — 1946. *Hereditas*, **32**, 514.
 BHADURI, P. N. 1933. *J. Indian bot. Soc.* **12**, 56.
 — 1935. *J. Indian bot. Soc.* **14**, 133.
 — 1941. *Ann. Bot., Lond.* **5**, 1.
 — 1942. *Ann. Bot., Lond.* **6**, 229.
 BHADURI, E. N. & BOSE, P. C. 1947. *J. Genet.* **48**, 237.
 BHADURI, P. N. & BOSE, S. 1949. *Proc. 36th Indian Sci. Congr.* pt. 3, 139.
 BHADURI, P. N. & ISLAM, A. S. 1949. *Proc. 36th Indian Sci. Congr.* pt. 3, 139.
 BHADURI, P. N. & KAR, A. K. 1949. *Proc. 36th Indian Sci. Congr.* pt. 3, 140.
 BHALLA, V. 1941. *Proc. Indian Sci. Congr.*, 1941.
 BHATTACHARJEE, S. K. 1955. *Caryologia*, **6**, 333.
 BIANCHI, R. 1946. *Ber. schweiz. bot. Ges.* **56**, 523.
 BILLERI, G. 1954. *Caryologia*, **6**, 45.
 BILLINGS, F. H. 1904. *Bot. Gaz.* **38**, 99.
 — 1937. *New Phytol.* **36**, 301.
 BJÖRKMAN, S. O. 1951. *Hereditas*, **37**, 465.
 — 1954. *Hereditas*, **40**, 254.
 BLACKBURN, K. B. 1928. *Z.i.A.V. Suppl.* **1**, 439.
 — 1933. *Proc. Univ. Durham phil. Soc.* **9**, 84.
 — 1953. *Rep. Soc. guernesiaise*, **15**, 169.
 BLACKBURN, K. B. & BOULT, J. J. 1930. *Proc. Univ. Durham phil. Soc.* **8**, 260.
 BLACKBURN, K. B. & HARRISON, J. W. H. 1921. *Ann. Bot.* **35**, 159.
 — 1924. *Ann. Bot., Lond.* **38**, 361.
 BLEIER, H. 1925. *Jb. wiss. Bot.* **64**, 604.
 — 1928. *Z.i.A.V. Suppl.* **1**, 447.
 — 1930. *Z. Zellforsch.* **11**, 218.
 BØCHER, T. W. 1932. *Bot. Tidskr.* **42**, 183.
 — 1936. *Hereditas*, **22**, 269.
 — 1938a. *Svensk bot. Tidskr.* **32**, 346.
 — 1938b. *Dansk bot. Ark.* **9**, 1.
 — 1940. *K. danske vidensk. Selsk. Biol. Medd.* **15**.
 — 1941. *Medd. Grønland*, **131**, 3.
 — 1943. *Hereditas*, **29**, 499.
 — 1944. *Dansk. bot. Ark.* **11**, 1.
 — 1945. *Hereditas*, **31**, 220.
 — 1947a. *K. danske vidensk. Selsk. Biol. Medd.* **20**, 3.
 — 1947b. *Bot. Notiser*, 1947, 353.
 — 1949. *New Phytol.* **48**, 285.
 — 1950. *Bot. Notiser*, 1950, 353.
 — 1951. *K. danske vidensk. Selsk. Biol. Skr.* **6** (7), 1.
 — 1954. *Svensk bot. Tidskr.* **48**, 31.
 BØCHER, T. W. & LARSEN, K. 1950. *Medd. Grønland*, **147**, 3.
 BØCHER, T. W., LARSEN, K. & RAHN, K. 1953. *Hereditas*, **39**, 289.
 BOEHM, K. 1931. *Planta*, **14**, 411.

- BOELCKE, O. 1951. *Darwiniana*, 9, 348.
- BOLTON, J. L. & GREENSHIELDS, J. E. R. 1950. *Science*, 112, 275.
- BOSCH, E. 1947. *Ber. Schweiz. bot. Ges.* 57, 37.
- BOSEMARK, N. O. 1950. *Hereditas*, 36, 366.
- 1954. *Hereditas*, 40, 346.
- BOUHARMONT, J. 1954. *Cellule*, 56, 253.
- *BOWDEN, W. M. 1940a. *Amer. J. Bot.* 27, 357.
- 1940b. *Chron. Bot.* 6, 123.
- *— 1945a. *Amer. J. Bot.* 32, 81.
- *— 1945b. *Amer. J. Bot.* 32, 191.
- 1948. *Amer. J. Bot.* 35, 377.
- 1954. *Genetics*, 39, 959.
- BOYLE, W. S. 1944. *Madroño*, 7, 129.
- 1945. *Madroño*, 8, 1.
- 1950. *Amer. J. Bot.* 37, 291.
- BRABEC, F. 1954. *Chromosoma*, 6, 135.
- BRANAS, M. 1932. *C. R. Acad. Sci. Paris*, 194, 121.
- BRANDBERG, B. 1948. *Ark. Bot.* 33B, 1.
- BRANDT, J. P. 1952. *Bull. Soc. neuchâtel. Sci. nat.* 75, 179.
- 1953. *Bull. Soc. neuchâtel. Sci. nat.* 76, 111.
- BREMER, G. 1923. *Genetica*, 5, 97, 273.
- 1924. *Arch. Suikerind. Ned.-Ind.* 1924, 16, 477.
- 1931. *Arch. Suikerind. Ned.-Ind.* 1931, nos. 13 & 31.
- 1934. *Arch. Suikerind. Ned.-Ind.* 1934, 5, 141.
- BRESLAWETZ, L. 1926. *Bot. Arch.* 7, 388.
- BRESLAWETZ, L., MEDWEDEWA, G. & MAGILT, M. 1934. *Z. Zücht. A*, 19, 229.
- BRETT, O. E. 1955. *New Phytol.* 54, 138.
- BREVIGLIERI, N. & BATTAGLIA, E. 1955. *Caryologia*, 6, 271.
- BRINGHURST, R. S. 1954. *Proc. Amer. Soc. hort. Sci.*, 63, 239.
- BRITTINGHAM, W. H. 1934. *Amer. J. Bot.* 21, 77.
- *BRITTON, D. M. 1951. *Brittonia*, 7, 233.
- BROCK, R. D. 1952. *Ann. Rep. John Innes Hort. Inst.* 42, 47.
- 1953. *Nature*, 171, 939.
- BROWN, M. S. & MENZEL, M. Y. 1952. *Bull. Torrey bot. Cl.* 79, 110.
- BROWN, S. W. 1943. *Amer. J. Bot.* 30, 686.
- BROWN, W. H. 1908. *Bot. Gaz.* 46, 445.
- BROWN, W. L. 1939. *Amer. J. Bot.* 26, 717.
- BROWN, W. V. 1946. *Bot. Gaz.* 108, 262.
- *— 1948. *Amer. J. Bot.* 35, 382.
- 1949. *Madroño*, 10, 97.
- *— 1950. *Bull. Torrey bot. Cl.* 77, 63.
- *— 1951. *Bull. Torrey bot. Cl.* 78, 292.
- 1953. *Kew Bull.* 1953, 293.
- BROWN, W. L. & CLARK, R. B. 1940. *Amer. J. Bot.* 27, 237.
- BROWN, W. V. & COE, G. E. 1951. *Amer. J. Bot.* 38, 823.
- BROWN, W. V., PONEWCZYNSKI, H. T. & SCARBOROUGH, H. H. 1951. *Bull. Torrey bot. Cl.* 78, 66.
- BRŮŽEK, A. 1932. *Preslia*, 11, 1.
- BRÜCHER, E. H. & ROSS, H. 1953. *Lilloa*, 26, 453.
- BRUMFIELD, R. T. 1941. *Amer. J. Bot.* 28, 713.
- BRUNN, H. G. 1932a. *Hereditas*, 16, 63.
- *— 1932b. *Symb. bot. upsaliens.* 1, 1.
- BUCHHOLZ, J. T., WILLIAMS, L. F. & BLAKESLEE, A. F. 1935. *P.N.A.S.* 21, 651.
- BUKASOV, S. M. 1935. In Vavilov, 1935 (3, 1) q.v.
- 1938. *C.R. Acad. Sci. U.R.S.S.* 20, 177.
- 1940. *Soviet Plant Ind. Rec.* 4, 3.
- BUKASOV, S. M. & LECHNOVICZ. 1935. *Rev. argent. Agron.* 1935, 173.
- BURBANCK, M. P. 1941. *Bot. Gaz.* 103, 247.
- 1944. *Bot. Gaz.* 105, 339.

- BURKART, A. 1949a. *Darwiniana*, 9, 1.
 — 1949b. *Darwiniana*, 9, 63.
 BURKART, A. & BRÜCHER, H. 1953. *Züchter*, 23, 65.
 BURNS, G. W. 1942. *Amer. Midl. Nat.* 28, 127.
 BURSTRÖM, H. 1929. *Acta Hort. berg.* 9, 293.
 BURTON, G. W. 1940. *J. agr. Res.* 60, 193.
 — 1942. *Amer. J. Bot.* 29, 355.
 BUSHNELL, E. P. 1936. *Bot. Gaz.* 98, 356.
 BUXTON, B. H. & DARK, S. O. S. 1934. *J. Genet.* 29, 109.
 BUXTON, B. H. & DARLINGTON, C. D. 1932. *New Phytol.* 31, 225.
 BUXTON, B. H. & NEWTON, W. C. F. 1928. *J. Genet.* 19, 269.
- CALDER, J. W. 1937. *J. Linn. Soc. (Bot.)*, 51, 1.
 CALLAN, H. G. 1941. *Ann. Bot., Lond.* 5, 579.
 CAMARA, A. & JESUS, A. DE. 1946. *Agron. lusit.* 8, 95.
 CAMPIN, M. G. 1924. *New Phytol.* 23, 282.
 CAPOOR, S. PR. 1937. *Beih. bot. Zbl.* 57, A, 233.
 CARANO, E. 1926. *Ann. Bot., Roma*, 17, 50.
 CÁRDENAS, M. & HAWKES, J. G. 1946. *J. Linn. Soc. (Bot.)*, 53, 91.
 — 1948. *Rev. Agric. Cochabamba*, 4, 30.
 CARLETTO, G. M. 1948. *Bull. Mus. Nac. Rio de Jan. Bot. Ser.* 9, 1.
 CARLSON, E. M. & STUART, B. C. 1936. *New Phytol.* 35, 68.
 CARLSON, M. C. 1945. *Bot. Gaz.* 107, 107.
 CARNIEL, K. 1952. *Öst. Bot. Z.* 99, 318.
 CARPIO, M. D. A. 1952. *Genet. Iber.* 4, 47.
 CARTER, K. M. 1928. *J. R. micr. Soc.* 48, 389.
 CARVALHO, M. L. DE. 1948. *Portug. acta biol.* 2A, 255.
 CASTETTER, E. F. 1930. *Amer. J. Bot.* 17, 41.
 CASTRO, D. DE. 1941. *Agron. lusit.* 3, 104.
 — 1943. *Agron. lusit.* 5, 243.
 — 1944. *Brot. Ciênc. nat.* 13, 73.
 — 1945a. *Bol. Soc. Brot.* 19, 525.
 — 1945b. *Bol. Soc. Brot.* 19, 755.
 — 1949. *Agron. lusit.* 11, 85.
 CASTRO, D. DE & FONTES, F. C. 1946. *Brot. Ciênc. nat.* 15, 38.
 CASTRO, D. DE & WAGNER, N. M. 1950. *Genet. Iber.* 2, 75.
 CASTRONOVO, A. 1945. *Darwiniana*, 7, 38.
 CATCHESIDE, D. G. 1950. *Genet. iber.* 2, 139.
 CAVE, M. S. 1948a. *Madroño*, 9, 257.
 — 1948b. *Amer. J. Bot.* 35, 343.
 — 1949. *Madroño*, 10, 95.
 CAVE, M. S. & BRADLEY, M. V. 1943. *Amer. J. Bot.* 30, 142.
 *CAVE, M. S. & CONSTANCE, L. 1942. *Univ. Calif. Publ. Bot.* 18, 205.
 * — 1944. *Univ. Calif. Publ. Bot.* 18, 293.
 * — 1947. *Univ. Calif. Publ. Bot.* 18, 449.
 * — 1950. *Univ. Calif. Publ. Bot.* 23, 363.
 CELARIER, R. P. 1955. *Bull. Torrey bot. Cl.* 82, 30.
 CHAKRAVORTI, A. K. 1948. *Proc. Indian Acad. Sci.* 27, § B, 74.
 — 1949. *Proc. 36th Indian Sci. Congr.* pt. 3, 143.
 — 1952. *Proc. 39th Indian Sci. Congr.* pt. 3, 30.
 CHAMPAGNAT, M. 1952. *Bull. Soc. bot. Fr.* 99, 301.
 CHANDLER, C. 1943. *Bull. Torrey bot. Cl.* 70, 612.
 CHASE, S. S. 1947. *Amer. J. Bot.* 34, 581.
 CHATELIER, G. GAZET DU. 1939. *Rev. Cytol., Paris*, 4, 1.
 CHAUDURI, K. 1940. *Curr. Sci.* 9, 416.
 CHEESEMAN, E. E. 1947. *Kew Bull.* 1947, 97.
 CHEESEMAN, E. E. & LARTER, L. N. H. 1935. *J. Genet.* 30, 31.
 CHEVALIER, E. 1945. *Rev. Cytol., Paris*, 8, 77.
 CHIARUGI, A. N. 1925. *Nuovo G. bot. ital.* 32, 223.

- CHIARUGI, A. N. 1926. *Nuovo G. bot. ital.* 33, 501.
 — 1927b. *Nuovo G. bot. ital.* 34, 783.
 — 1927c. *Nuovo G. bot. ital.* 34, 864.
 — 1930b. *Boll. Soc. ital. Biol. sper.* 5.
 — 1933. *Nuovo G. bot. ital.* 40, 63.
 — 1937. *Nuovo G. bot. ital.* 44, 641.
 — 1945. *Nuovo G. bot. ital.* 52, 93.
 — 1949. *Caryologia*, 1, 362.
 — 1950. *Caryologia*, 3, 148.
 CHIN, T. C. 1941. *Ann. Bot., Lond.* 5, 535.
 CHIN, T. C. & YOUNGKEN, H. W. 1947. *Amer. J. Bot.* 34, 401.
 CHITTENDEN, R. J. 1928. *J. Genet.* 19, 285.
 CHOUDHURI, H. C. 1942. *Ann. Bot., Lond.* 6, 183.
 CHRISTEN, H. R. 1950. *Ber. schweiz. bot. Ges.* 60, 153.
 CHRISTENSEN, H. M. & BAMFORD, R. 1943. *J. Hered.* 34, 99.
 CHRISTIANSEN, H. 1950. *K. danske Vidensk. Selsk.* 18, 1.
 CHRISTOFF, M. 1929. *Bull. Soc. bot. Bulg.* 3, 279.
 — 1940. *Planta*, 31, 73.
 CHRISTOFF, M. & CHRISTOFF, M. A. 1948. *Genetics*, 33, 36.
 CHURCH, G. L. 1929a. *Bot. Gaz.* 87, 608.
 — 1929b. *Bot. Gaz.* 88, 63.
 — 1936. *Amer. J. Bot.* 23, 12.
 — 1940. *Amer. J. Bot.* 27, 263.
 — 1949. *Amer. J. Bot.* 36, 155.
 CLARKE, A. E. 1932. *Proc. 6th intern. Congr. Genet. Ithaca*, 2, 20.
 — 1934. *Univ. Calif. Publ. Bot.* 17, 435.
 CLAUSEN, J. 1926. *Hereditas*, 8, 1.
 — 1929. *Ann. Bot., Lond.* 43, 741.
 — 1931a. *Hereditas*, 15, 62.
 — 1931b. *Hereditas*, 15, 67.
 — 1931c. *Bot. Tidskr.* 41, 317.
 — 1931d. *Hereditas*, 15, 219.
 — 1933. *Hereditas*, 18, 65.
 — 1951. *Stages in the Evolution of Plant Species.* Ithaca.
 CLAUSEN, J., KECK, D. D. & HIESEY, W. M. 1934. *Ann. Rep. Pl. Biol., Yearb. Carneg. Instn.* 173.
 — — — 1937. *Ann. Rep. Pl. Biol., Yearb. Carneg. Instn.* 13.
 — — — 1940. *Carneg. Instn. Wash., Publ.* 520.
 — — — 1950. *Ann. Rep. Pl. Biol., Yearb. Carneg. Instn.* 49, 101.
 CLAUSEN, R. E. & GOODSPEED, T. H. 1925. *Genetics*, 10, 278.
 CLAUSEN, R. T. & UHL, C. H. 1943. *Brittonia*, 5, 33.
 — — — 1944. *Madroño*, 7, 161.
 CLELAND, R. E. 1950. *Ind. Univ. Publ.* 16, 1.
 COE, G. E. 1953. *Amer. J. Bot.* 40, 335.
 — 1954. *Bull. Torrey bot. Cl.* 81, 141.
 COLEMAN, L. C. 1940. *Amer. J. Bot.* 27, 887.
 COLLINS, E. J. 1933. *J. R. hort. Soc.* 58, 17.
 COLLINS, J. L. 1933. *Cytologia*, 4, 248.
 COLLINS, J. L. & KERNS, K. R. 1931. *J. Hered.* 22, 139.
 — — — 1935. *Proc. Hawaii Acad. Sci.* 10, 10.
 — — — 1936. *Amer. Nat.* 70, 45.
 CONDIT, I. J. 1928. *Univ. Calif. Publ. Bot.* 11, 233.
 — 1933. *Univ. Calif. Publ. Bot.* 17, 61.
 COONEN, L. P. 1939. *Amer. J. Bot.* 26, 49.
 COOPER, D. C. 1931. *Amer. J. Bot.* 18, 337.
 — 1932. *Amer. J. Bot.* 19, 429.
 — 1935a. *Amer. J. Bot.* 22, 453.
 — 1935b. *J. Agr. Res.* 51, 471.
 — 1936. *Amer. J. Bot.* 23, 231.

- COOPER, D. C. 1939. *Bot. Gaz.* 100, 362.
 — 1941. *Amer. J. Bot.* 28, 755.
 COOPER, D. C. & MAHONY, K. L. 1935. *Amer. J. Bot.* 22, 843.
 COOPER, G. O. 1935. *Bot. Gaz.* 97, 169.
 — 1936. *Bot. Gaz.* 98, 348.
 CORTI, R. N. 1930b. *Nuovo G. bot. ital.* 37, 679.
 — 1931a. *Nuovo G. bot. ital.* 38, 230.
 — 1931b. *Nuovo G. bot. ital.* 38, 564.
 — 1948. *Nuovo G. bot. ital.* 55, 446.
 COULTER, J. M. 1908. *Bot. Gaz.* 46, 43.
 COUTINHO, L. DE A. 1940. *Agron. lusit.* 2, 379.
 — 1945. *Bol. Soc. Brot.* 19, 448.
 COUTINHO, L. DE A. & LORENZO-ANDREU, A. 1948. *An. Estac. exp. Aula Dei*, 1, 3.
 COUTINHO, L. DE A. & RIBEIRO, M. I. A. 1945. *Rev. agron. Lisboa*, 33, 354.
 COUTINHO, L. DE A. & SANTOS, A. 1943. *Agron. lusit.* 5, 349.
 COVAS, G. 1945. *Rev. argent. Agron.* 12, 315.
 — 1949a. *Rev. argent. Agron.* 16, 173.
 — 1949b. *Darwiniana*, 9, 158.
 — 1950a. *Rev. argent. Agron.* 17, 78.
 — 1950b. *Rev. argent. Agron.* 17, 257.
 — 1950c. *Bol. Soc. argent. Bot.* 3, 83.
 — 1951. *Rev. argent. Agron.* 18, 74.
 — 1952. *Rev. argent. Agron.* 19, 52.
 COVAS, G. & BOCKLET, M. 1945. *Rev. argent. Agron.* 12, 261.
 COVAS, G. & CHERUBINI, C. 1946. *Rev. argent. Agron.* 13, 55.
 COVAS, G. & SCHNACK, B. 1944. *Rev. argent. Agron.* 11, 89.
 — 1945. *Rev. argent. Agron.* 12, 57.
 — 1946. *Rev. argent. Agron.* 13, 153.
 — 1947. *Rev. argent. Agron.* 14, 224.
 CRAMPTON, B. 1950. *Madroño*, 10, 95.
 CRANE, M. B. 1936. *Roy. Hort. Soc. Conf. on Cherries & Soft Fruits*, 121.
 CRANE, M. B. & DARLINGTON, C. D. 1927. *Genetica*, 9, 241.
 CRANE, M. B. & GAIRDNER, A. E. 1923. *J. Genet.* 13, 187.
 CRANE, M. B. & LAWRENCE, W. J. C. 1938. *Genetics of Garden Plants*, 2nd edn. London.
 CRANE, M. B. & THOMAS, P. T. 1937. *J. Genet.* 37, 287.
 — 1939. *Nature*, 143, 684.
 — 1942. *Nature*, 150, 431.
 CRUICKSHANK, R. H. 1953. *Pap. roy. Soc. Tasm.* 87, 13.
 CUGNAC, A. & SIMONET, M. 1941. *C.R. Soc. Biol.* 135, 728.
 CURTIS, W. M. 1952. *New Phytol.* 51, 398.
 DAHL, A. O. 1937. *Amer. J. Bot.* 24, 732.
 DAHLGREN, K. V. O. 1916. *K. svenska Vetensk Akad. Handl.* 56, no. 4.
 — 1952. *Hereditas*, 38, 314.
 D'AMATO, F. 1939. *Nuovo G. bot. ital.* 46, 470.
 — 1940. *Nuovo G. bot. ital.* 47, 349.
 — 1945. *Nuovo G. bot. ital.* 52, 86.
 — 1946. *Nuovo G. bot. ital.* 53, 170.
 — 1947b. *Nuovo G. bot. ital.* 53, 405.
 — 1948. *Caryologia*, 1, 48.
 — 1949a. *Caryologia*, 2, 60.
 — 1949b. *Caryologia*, 2, 71.
 — 1949c. *Caryologia*, 1, 194.
 DANGEARD, P. 1937. *Botaniste*, 28, 291.
 DANIELSSON, B. 1946. *Sverig. pomol. Fören. Årsskr.* 1945, 7.
 DANSEREAU, P. 1940. *Ann. Epiphyt.* 6, 7.
 DARK S. O. S. 1932a. *Ann. Bot., Lond.* 46, 965.
 — 1932b. *New Phytol.* 31, 310.

- DARK, S. O. S. 1934. *J. Genet.* **29**, 85.
 — 1936. *J. Genet.* **32**, 353.
 DARLINGTON, C. D. 1927. *J. Pomol.* **6**, 242.
 — 1928. *J. Genet.* **19**, 213.
 — 1929a. *J. Genet.* **21**, 207.
 — 1929b. *Genetica*, **11**, 267.
 — 1930. *J. Genet.* **22**, 65.
 — 1931a. *J. Genet.* **24**, 65.
 — 1931b. *J. Genet.* **24**, 405.
 — 1931c. *Cytologia*, **3**, 21.
 — 1932b. *Biol. Bull., Wood's Hole*, **63**, 368.
 — 1933a. *Cytologia*, **4**, 229.
 — 1933b. *J. Genet.* **28**, 327.
 — 1936a. *Cytologia*, **7**, 242.
 — 1936b. *Cytologia*, **7**, 248.
 — 1936c. *Proc. Roy. Soc. ser. B*, **121**, 264.
 — 1937a. *Recent Advances in Cytology*. 2nd edn. London & Philadelphia.
 — 1937b. *J. Genet.* **35**, 259.
 — 1941. *Ann. Bot., Lond.* **5**, 203.
 — 1956. *Chromosome Botany*, Allen & Unwin, London.
 DARLINGTON, C. D. & GAIRDNER, A. E. 1937. *J. Genet.* **35**, 97.
 DARLINGTON, C. D., HAIR, J. B. & HURCOMBE, R. 1951. *Heredity*, **5**, 233.
 DARLINGTON, C. D. & JANAKI AMMAL, E. K. 1945. *Ann. Bot., Lond.* **9**, 267.
 DARLINGTON, C. D. & LA COUR, L. F. 1940. *J. Genet.* **40**, 185.
 — — 1941. *Ann. Bot., Lond.* **5**, 547.
 — — 1942. *The Handling of Chromosomes*. London.
 — — 1950. *Heredity*, **4**, 217.
 DARLINGTON, C. D. & MOFFETT, A. A. 1930. *J. Genet.* **22**, 129.
 DARLINGTON, C. D. & THOMAS, P. T. 1941. *Proc. Roy. Soc. B*, **130**, 127.
 DARLINGTON, C. D. & UPCOTT, M. B. 1941. *J. Genet.* **41**, 275.
 DARMER, G. 1947. *Biol. Zbl.* **66**, 166.
 DARROW, G. M. 1937. *Yearb. U.S. Dep. Agric.* **445**.
 *DARROW, G. M., CAMP, W. H., FISCHER, H. E. & DERMEN, H. 1944. *Bull. Torrey bot. Cl.* **71**, 498.
 DATTA, P. C. 1952. *Caryologia*, **5**, 86.
 DATTA, S. 1932. *Mem. Manchr. lit. phil. Soc.* **76**, 85.
 — 1933a. *J. Indian Bot. Soc.* **12**, 131.
 — 1933b. *Curr. Sci.* **1**, 364.
 DAVIE, J. H. 1935. *Genetica*, **17**, 487.
 DAVIES, E. W. 1953a. *Nature*, **171**, 659.
 — 1953b. *Watsonia*, **3**, 66, 70.
 — 1955. *Watsonia*, **3**, 129.
 DAWSON, C. D. R. 1941. *J. Genet.* **42**, 49.
 DAWSON, R. F. 1948. *Lloydia*, **11**, 81.
 DELAUNAY, L. N. 1926. *Z. Zellforsch.* **4**, 338.
 *DELAY, C. 1951. *Rev. Cytol., Paris*, **12**, 1.
 DELISLE, A. L. 1937. *Amer. J. Bot.* **24**, 741.
 DERMEN, H. 1931a. *Amer. J. Bot.* **18**, 250.
 — 1931b. *J. Arnold Arbor.* **12**, 281.
 — 1932a. *J. Arnold Arbor.* **13**, 50.
 — 1932b. *J. Arnold Arbor.* **13**, 410.
 — 1936a. *Cytologia*, **7**, 160.
 — 1936c. *J. Arnold Arbor.* **17**, 90.
 — 1949. *J. Hered.* **40**, 162.
 DIANNELIDIS, T. 1949. *Prak. Acad. Athen.*, **23**, 352.
 — 1951. *Portug. acta biol. A*, **3**, 151.
 DILLEWIJN, C. VAN. 1939. *Ned. Boschb. Tijdschr.* **12**, 470.
 — 1942. *Genetica*, **22**, 131.
 DILLMAN, A. 1933. *Science*, **78**, 409.

- DIXIT, P. D. 1932. *Indian J. agric. Sci.* **2**, 385.
- DNYANSAGAR, V. R. 1949. *J. Indian bot. Soc.* **28**, 95.
- 1951. *J. Indian. bot. Soc.* **30**, 100.
- 1952. *Proc. Indian Acad. Sci. B*, **36**, 1.
- DOBRONZ, K. 1935. *Diss. Univ., Berlin*, 61 pp.
- DODDS, K. S. 1946. *Nature*, **157**, 729.
- DODDS, K. S. & SIMMONDS, N. W. 1948. *J. Genet.* **48**, 285.
- DOLCHER, T. 1947. *Nuovo G. bot. ital.* **54**, 648.
- 1949. *Caryologia*, **2**, 55.
- 1950. *Caryologia*, **2**, 127.
- DORSEY, E. 1925. Thesis, Cornell Univ.
- 1936. *J. Hered.* **27**, 155.
- 1939. *J. Hered.* **30**, 393.
- DOUGHTY, L. R. 1936. *J. Genet.* **33**, 197.
- 1939. *Ann. Rep. E. Afr. Agric. Res. Sta. Amani*, 1939.
- DOULAT, E. 1944. *Rev. Cytol., Paris*, **7**, 14.
- 1946. *C.R. Acad. Sci., Paris*, **222**, 1510.
- 1947. *C.R. Acad. Sci., Paris*, **225**, 354.
- DOUWES, H. 1951. *J. Genet.* **50**, 179.
- 1953. *J. Genet.* **51**, 611.
- DOWRICK, G. J. 1952a. *Ann. Rep. John Innes Hort. Inst.* **42**, 47.
- 1952b. *Heredity*, **6**, 365.
- DRAHOWZAL, G. 1936. *Öst. Bot. Z.* **86**, 241.
- DUDLEY, M. G. 1937. *Bot. Gaz.* **98**, 556.
- DUFFIELD, J. W. 1940. *Amer. J. Bot.* **27**, 787.
- 1943. *Chron. Bot.* **7**, 390.
- DUGGAR, B. M. 1900. *Bot. Gaz.* **29**, 81.
- DUNCAN, R. E. 1947. *Orchid Digest*, **11**, 199.
- DUNCAN, R. E. & MCLEOD, R. A. 1948. *Bull. Amer. Orchid Soc.* **17**, 170.
- — 1949a. *Bull. Amer. Orchid Soc.* **18**, 84.
- — 1949b. *Bull. Amer. Orchid Soc.* **18**, 159.
- — 1949c. *Bull. Amer. Orchid Soc.* **18**, 573.
- — 1950. *Bull. Amer. Orchid Soc.* **19**, 489.
- DUSSEAU, A. & MAGNANT, C. 1941a. *C.R. Acad. Sci., Paris*, **212**, 455.
- — 1941b. *C.R. Acad. Sci., Paris*, **213**, 276.
- DUTT, M. 1952a. *Curr. Sci.* **21**, 168.
- 1952b. *Sci. & Cult.* **17**, 527.
- EARNSHAW, F. 1942. *New Phytol.* **41**, 151.
- EAST, E. M. 1933. *Genetics*, **18**, 324.
- EDMAN, G. 1929. *Acta Hort. berg.* **9**, 165.
- 1931. *Acta Hort. berg.* **11**, 13.
- EHRENBERG, L. 1945. *Bot. Notiser*, 1945, 430.
- EHRENDORFER, F. 1949. *Öst. Bot. Z.* **96**, 109.
- 1952. *Carneg. Inst. Wash. Yearb.* **51**, 125.
- EICHHORN, A. 1937a. *C.R. Acad. Sci., Paris*, **204**, 1669.
- 1937b. *Cytologia, F.J.N.* **447**.
- 1938. *C.R. Acad. Sci., Paris*, **206**, 1266.
- 1943. *Bull. Mus. Hist. nat. Paris*, Ser. 2, **15**, 461.
- 1949. *Rev. Cytol., Paris*, **11**, 333.
- 1950. *Rev. gén. Bot.* **57**, 209.
- EICHHORN, A. & FRANQUET, R. 1936. *C.R. Acad. Sci., Paris*, **202**, 1609.
- EIGST, O. J. 1936. *Bot. Gaz.* **98**, 363.
- 1942. *Amer. J. Bot.* **29**, 626.
- EINSET, J. 1944. *Amer. J. Bot.* **31**, 336.
- 1947. *Gentes Herbarum*, **7**, 181.
- EINSET, J. & IMHOFE, B. 1947. *Proc. Amer. Soc. hort. Sci.* **50**, 45.
- — 1949. *Proc. Amer. Soc. hort. Sci.* **53**, 197.
- EINSET, J. & LAMB, B. 1951. *Proc. Amer. Soc. hort. Sci.* **58**, 103.

- EKLUNDH-EHRENBURG, C. 1949. *Hereditas*, **35**, 1.
- ELLERSTRÖM, S. & TJÖ, J. H. 1950. *Bot. Notiser*, 1950, 463.
- ELLIOT, E. 1950. *New Phytol.* **49**, 344.
- ELLIOTT, F. C. 1949. *Iowa St. Coll. J. Sci.* **24**, 44.
- ELVERS, I. 1932a. *Svensk bot. Tidskr.* **26**, 13.
- 1932b. *Acta Hort. berg.* **11**, 81.
- EMERSON, S. H. 1938. *Genetics*, **23**, 190.
- EMME, H. 1928. *Zi.A.V.* **47**, 99.
- 1930. *Züchter*, **2**, 65.
- EMME, H. & SCHEPELJEW, H. 1927. *Bull. appl. Bot. Pl. Breed*, **17**, 265.
- EMSWELLER, S. L. & BRIERLEY, P. 1940. *J. Hered.* **31**, 223.
- EMSWELLER, S. L. & LUMSDEN, D. V. 1943. *Proc. Amer. Soc. hort. Sci.* **42**, 593.
- ERLANDSSON, S. 1939a. *Hereditas*, **25**, 27.
- 1939b. *Bot. Notiser*, 1939, 261.
- 1942a. *Ark. Bot.* **30**, 1.
- 1942b. *Hereditas*, **28**, 503.
- 1942c. *Acta Hort. berg.* **13**, 117.
- 1946. *Svensk bot. Tidskr.* **40**, 427.
- ERLANSO, E. W. 1929. *Bot. Gaz.* **87**, 443.
- 1932. *Amer. Rose Ann.* **17**, 83.
- 1933. *Bot. Gaz.* **94**, 551.
- 1934. *Bot. Gaz.* **96**, 197.
- 1938. *New Phytol.* **37**, 72.
- ERITZIAN, A. 1932. *Bull. appl. Bot. Ser.* **5**, 47.
- ERWIN, A. T. & HABER, E. S. 1930. *Bull. agric. Exp. Sta., Iowa*, **263**, 343.
- EYSTER, W. H. 1939. *Proc. 7th Int. Genet. Congr.* **117**.
- FABERGÉ, A. C. 1935. *Nature*, **135**, 876.
- 1944. *J. Genet.* **46**, 125.
- FAGERLIND, F. 1934. *Hereditas*, **19**, 223.
- 1937. *Acta Hort. berg.* **11**, 195.
- 1938. *Svensk bot. Tidskr.* **32**, 139.
- 1940. *Hereditas*, **26**, 23.
- 1947. *Acta Hort. berg.* **14**, 221.
- FARDY, A. 1940. *Bull. Mus. Hist. nat., Paris*, **12**, 132.
- FAVARGER, C. 1946. *Ber. schweiz. bot. Ges.* **56**, 365.
- 1949a. *Ber. schweiz. bot. Ges.* **59**, 62.
- 1949b. *Bull. Soc. neuchâtel. Sci. nat.* **72**, 15.
- 1952a. *Ber. schweiz. bot. Ges.* **62**, 5.
- 1952b. *Ber. schweiz. bot. Ges.* **62**, 244.
- 1953. *Bull. Soc. neuchâtel. Sci. nat.* **76**, 133.
- FAVERGER, C. & SÖLLNER, R. 1949. *Ber. schweiz. bot. Ges.* **59**, 87.
- FEDOROVA, N. J. 1946. *C.R. Acad. Sci. U.R.S.S.* **52**, 545.
- FEDOTOV, V. S. 1935. *Bull. appl. Bot., Pl.-Breed*, **9**, 165.
- FEINBRUN, N. 1939. *Palest. J. Bot. Rehovot*, **1**, 42.
- 1950. *Palest. J. Bot., Jerusalem*, **5**, 13.
- FELFÖLDY, L. J. M. 1947a. *Archiv. Biol. Hung.* **17**, 101.
- 1947b. *Rep. Hung. agric. Exp. Sta.* **47-49**, 11.
- FERGUSON, M. C. & COOLIDGE, E. B. 1932. *Amer. J. Bot.* **19**, 644.
- FERGUSON, N. 1926. *Phil. Trans. Roy. Soc. Ser. B*, **215**, 225.
- FERNANDES, A. 1931. *Bol. Soc. Brot.* **6**, 294.
- 1934. *Bol. Soc. Brot.* **11**, 1.
- 1936. *Bol. Soc. Brot.* **11**, 267.
- 1937a. *Bol. Soc. Brot.* **12**, 93.
- 1937b. *Bol. Soc. Brot.* **12**, 159.
- 1939a. *Sci. genet.* **1**, 16.
- 1939b. *Bol. Soc. Brot.* **13**, 487.
- 1939c. *Sci. genet.* **1**, 141.
- 1940. *Bol. Soc. Brot.* **14**, 53.

- FERNANDES, A. 1943. *Bol. Soc. Brot.* 17, 5.
 — 1949a. *Bol. Soc. Brot.* 23, 1.
 — 1949b. *Bol. Soc. Brot.* 23, 177.
 — 1950a. *Bol. Soc. Brot.* 24, 291.
 — 1950b. *Agron. lusit.* 12, 551.
 — 1951. *Bol. Soc. Brot.* 25, 113.
 FERNANDES, A. & FERNANDES, R. 1945. *Herbertia*, 12, 85.
 — 1946. *Acta Univ. Conim.* 1.
 FERNANDES, A., GARCIA, J. & FERNANDES, R. 1948. *Mem. Soc. Brot.* 4, 5.
 FERNANDES, A. & NEVES, J. B. 1941. *Bol. Soc. Brot.* 15, 43.
 FIKRY, M. A. 1930. *J.R. micr. Soc.* 50, 387.
 FICKER, T. 1951. *Plant Life*, 7, 68.
 FINN, W. 1937. *J. Inst. bot. Acad. Sci. Ukr.* 12, 83.
 FINN, W. W. 1928. *Ber. dtsh. bot. Ges.* 46, 235.
 FISHER, W. D., BASHAW, E. C. & HOLT, E. C. 1954. *Agron. J.* 46, 401.
 FISK, E. L. 1931. *P.N.A.S.* 17, 511.
 FITZPATRICK, J. M. 1946. *New Phytol.* 45, 137.
 FLORIN, R. 1932. *Svensk bot. Tidskr.* 26, 205.
 FLORY, W. S. 1934. *Cytologia*, 6, 1.
 — 1936. *J. Arnold Arbor.* 17, 83.
 — 1937. *Cytologia, F.J.N.* 171.
 — 1940. *Texas Agr. Exp. Sta. Ann. Rep.* 53, 28.
 — 1943. *Herbertia*, 10, 114.
 — 1948. *Amer. J. Bot.* 35, 791.
 — 1950. *Virginia J. Sci.* 1, 11.
 FLOTO, E. V. & GUDJONSSON, G. 1947. *K. VetHøjsk. Aarsskr.* 1947, 31.
 FLOVIK, K. 1938. *Hereditas*, 24, 265.
 — 1940. *Hereditas*, 26, 430.
 FOGELBERG, S. O. 1938. *Bull. Torrey bot. Cl.* 65, 631.
 FORBES, I. 1952. *Agron. J.* 44, 194.
 FORD, C. E. 1938. *Genetica*, 20, 431.
 FOSTER, R. C. 1933. *J. Arnold Arbor.* 14, 386.
 — 1937. *Contr. Gray Herb. Harv. no.* 119.
 FOTHERGILL, P. G. 1936. *Proc. Univ. Durham phil. Soc.* 9, 205.
 — 1938. *Genetica*, 20, 159.
 — 1944. *New Phytol.* 43, 23.
 FRAHM-LELIVELD, J. A. 1953. *Euphytica*, 2, 46.
 FRANCINI, E. N. 1931. *Nuovo G. bot. ital.* 38, 155.
 FRANDSEN, N. H. & WINGE, O. 1932. *Hereditas*, 16, 212.
 FRANKEL, O. H. 1940. *J. Genet.* 40, 171.
 — 1941. *Nature*, 147, 117.
 FRANKEL, O. H. & HAIR, J. B. 1937. *N.Z. J. Sci. Tech.* 18, 669.
 FREIBURG, M. 1933. *Planta*, 20, 659.
 FRETER, L. E. & BROWN, W. V. 1955. *Bull. Torrey bot. Cl.* 82, 121.
 FRIESNER, R. C. 1930. *Butler Univ. bot. Stud.* 1, 77.
 FRISENDAHL, A. 1927. *Acta Hort. gothoburg.* 3, 99.
 FRISENDAHL, A. K. 1912. *Svensk Vet. Akad. Handl.* 48, 62.
 FRITSCH, R. 1935. *Diss. Univ. Berlin.*
 FROST, H. B. 1931. *P.N.A.S.* 17, 434.
 FRÖST, S. 1948. *Hereditas*, 34, 255.
 FRYER, J. R. 1930. *Canad. J. Res.* 3, 3.
 FUKUDA, Y. 1933. *Jap. J. Bot.* 6, 489.
 FULTS, J. L. 1942. *Amer. J. Bot.* 29, 45.
 FURUSATO, K. 1940. *Bot. & Zool., Tokyo*, 8, 1303.
 GAISER, L. O. 1927. *Trans. roy. Soc. Can.* 21 (5), 1.
 — 1949. *Amer. J. Bot.* 36, 122.
 — 1950a. *Amer. J. Bot.* 37, 414.
 — 1950b. *Amer. J. Bot.* 37, 763.

- GAISER, L. O. 1951a. *Madroño*, 11, 10.
 — 1951b. *Evolution*, 5, 52.
- GAISER, L. O., SUTHERLAND, M. & MOORE, R. 1943. *Amer. J. Bot.* 30, 543.
- GAJEWSKI, W. 1946. *Acta Soc. Bot. Polon.* 17, 129.
 — 1947. *Acta Soc. Bot. Polon.* 18, 33.
 — 1949. *Proc. 8th Int. Congr. Genet.* 578.
- GANESAN, D. 1939. *J. Genet.* 38, 493.
- GANGULY, J. K. 1946. *Curr. Sci.* 15, 112.
- GARBER, E. D. 1944a. *Amer. J. Bot.* 31, 161.
 — 1944b. *Amer. Nat.* 78, 89.
 — 1950. *Univ. Calif. Publ. Bot.* 23, 283.
 — 1954. *Bot. Gaz.* 115, 336.
- GARBER, E. D. & SNYDER, L. A. 1951. *Madroño*, 11, 6.
- GARCIA, J. G. 1942. *Bol. Soc. Brot.* 16, 183.
- GARDÉ, A. 1948. *Genet. iber.* 1, 69.
 — 1952a. *Genet. iber.* 3, 133.
 — 1952b. *Genet. iber.* 3, 145.
- * GARDÉ, A. & GARDÉ, N. 1949. *Agron. lusit.* 11, 91.
 * — 1951. *Genet. iber.* 3, 23.
- GARDÉ, A. & MALHEIROS-GARDÉ, N. 1952. *Genet. iber.* 4, 91.
 — 1953. *Genet. iber.* 5, 115.
 — 1954. *Brotéria*, 23, 5.
- GASSNER, G. G. 1941. *Beih. bot. Zhl. A*, 61, 237.
- GAUGER, W. 1937. *Planta*, 26, 529.
- GEISLER, F. 1931. *Butler Univ. bot. Stud.* 2, 53.
- GEITLER, L. 1929a. *Öst. bot. Z.* 78, 242.
 — 1929b. *Züchter*, 1, 243.
 — 1936. *Jb. wiss. Bot.* 83, 707.
 — 1939. *Öst. bot. Z.* 88, 226.
 — 1940. *Chromosoma*, 1, 554.
- GELIN, O. E. V. 1936. *Svensk bot. Tidskr.* 30, 324.
 — 1934. *Acta Hort. berg.* 11, 99.
- GENTSCHKEFF, G. 1938. *Genetica*, 20, 398.
- GENTSCHEFF, G. & GUSTAFSSON, A. 1940a. *Bot. Notiser*, 1940, 109.
 — 1940b. *Hereditas*, 26, 209.
- GENTSCHKEFF, G. 1937a. *Planta*, 27, 165.
 — 1937b. *Diss. Univ. Sofia*.
- GERSHOY, A. 1934. *Bull. Vt. agric. Exp. Sta.* no. 367.
- GHIMPU, V. 1928. *C.R. Acad. Sci., Paris*, 187, 245.
- GHIMPU, V. C. R. 1929a. *C.R. Soc. Biol., Paris*, 100, 187.
 — 1929b. *Congr. int. Agric., Bucarest*, 1929.
 — 1930. *Arch. Anat. micr.* 26, 135.
- GHOSE, A. K. 1952. *Sci. & Cult.* 17, 384.
- GIFFIN, M. H. 1936. *Trans. roy. Soc. S. Afr.* 24, 203.
- GILES, N. H. 1942. *Amer. J. Bot.* 29, 637.
- GIUFFRIDA, C. 1950. *Caryologia*, 3, 113.
- GLOTOV, V. 1940. *C.R. Acad. Sci. U.R.S.S.* 28, 450.
- GOLDSMITH, E. P. & KRUPKO, S. 1948. *J. S. Afr. Bot.* 14, 107.
- GOLUBINSKI, I. N. 1936. *Sovetsk. Bot.* 1936, 49.
 — 1937. *C.R. Acad. Sci. U.R.S.S.* 15, 261.
- GOODSPEED, T. H. 1930. *Univ. Calif. Publ. Bot.* 11, 299.
 — 1940. *Herbertia*, 7, 17.
 * — 1945. *Univ. Calif. Publ. Bot.* 18, 335.
- GOODSPEED, T. H., UBER, F. M. & AVERY, P. 1935. *Univ. Calif. Publ. Bot.* 18, 33.
- GOODWIN, R. H. 1937. *Amer. J. Bot.* 24, 425.
- GOPINATH, D. M. 1944. *Proc. Indian Acad. Sci. B*, 20, 175.
 — 1945. *Proc. Indian Acad. Sci. B*, 22, 225.
- GOTOH, K. 1937. *Jap. J. Genet.* 13, 209.
- GOTOH, K. & KIKKAWA, R. 1937. *Jap. J. Genet.* 13, 241.

- GOTOH, K. & OKURA, E. 1933. *J. Soc. trop. Agric., Taihoku Univ., Formosa*, **5**, 363.
- GOULD, F. W. 1953. *Amar. J. Bot.* **40**, 297.
- GOUWS, J. B. 1949. *Plant Life*, **5**, 54.
- 1950. *Natuurwet. Tijdschr.* **32**, 139.
- GOW, J. E. 1908. *Bot. Gaz.* **46**, 35.
- GRAM, K., LARSEN, C. M., LARSEN, C. S. & WESTERGAARD, M. 1941. *K. Vet Højsk. Aarskr.* 1941, 44.
- GRANER, E. A. 1935. *Contr. cytol. da Manioca Univ., S. Paulo, Escol. Sup. de Agric. 'Luiz de Querioz'*.
- 1942. *Bragantia, S. Paulo*, **2**, 23.
- GRANICK, E. B. 1944. *Amer. J. Bot.* **31**, 283.
- GRANT, V. 1950. *Yearb. Carneg. Inst. Wash.* **49**, 111.
- 1953. *Evolution*, **7**, 51.
- GRANT, W. F. 1953. *Amer. J. Bot.* **40**, 729.
- 1954. *Bot. Gaz.* **115**, 323.
- 1955. *Brittonia*, **8**, 121.
- GRAZE, H. 1933. *Jb. wiss. Bot.* **77**, 507.
- 1935. *Jb. wiss. Bot.* **81**, 609.
- GRECO, R. N. 1929. *Nuovo G. bot. ital.* **36**, 57.
- GREENLEAF, W. H. 1942. *J. Genet.* **43**, 69.
- 1947. *Proc. Amer. Soc. hort. Sci.* **49**, 231.
- GREGOR, J. W. & SANSOME, F. W. 1930. *J. Genet.* **22**, 373.
- GREGORY, P. J. 1936. *J. Linn. Soc. (Bot.)*, **50**, 363.
- *GREGORY, W. C. 1941. *Trans. Amer. Phil. Soc. n.s.* **31**, 443.
- *GRIESINGER, R. 1937. *Ber. dtisch. bot. Ges.* **55**, 556.
- GRIESINGER, R. & KLINKOWSKI, M. 1939. *Züchter*, **11**, 147.
- GRIFFEE, F. 1927. *Stud. biol. Sci. Univ. Minn.* **6**, 319.
- GRIMM, J. 1912. *Flora*, **104**, 309.
- GUARD, A. T. & HOBBS, C. H. 1941. *Proc. Ind. Acad. Sci.* **50**, 68.
- GUDJONSSON, G. 1941. *Bot. Tidskr.* **45**, 352.
- GUINOCHET, M. 1935. *Rev. Cytol., Paris*, **1**, 131.
- 1942. *Bull. Soc. bot. Fr.* **89**, 153.
- 1943. *Rev. Cytol., Paris*, **6**, 209.
- 1945. *Rev. Cytol., Paris*, **8**, 87.
- 1946. *C.R. Acad. Sci., Paris*, **222**, 1131.
- GUINOCHET, M. & LEMÉE, G. 1950. *Rev. gen. Bot.* **57**, 565.
- GULLINE, H. F. 1952. *Pap. roy. Soc. Tasm.* **86**, 131.
- GUSTAFSSON, A. 1932. *Hereditas*, **16**, 41.
- 1933. *Hereditas*, **18**, 77.
- 1935a. *Hereditas*, **20**, 1.
- 1935b. *Hereditas*, **21**, 1.
- 1939. *Hereditas*, **25**, 33.
- 1942. *Hereditas*, **28**, 249.
- 1943. *Acta Univ. lund.* n.s. **2**, 39, 3.
- 1947. *Acta Univ. lund.* n.s. **2**, 43, 1.
- GUSTAFSSON, A. & HÅKANSSON, A. 1942. *Bot. Notiser*, 1942, 331.
- GUSULEAC, M. & TARNAVSCHI, J. T. 1935. *Bull. Fac. Sci. Cernauti*, **9**, 387.
- DE HAAN, I. & DOORENBOS, J. 1951. *Meded. Landb. Hoogeschool, Wageningen*, **51**, 151.
- HAASE-BESSEL, G. 1928. *Planta*, **6**, 767.
- HAFLINGER, E. 1943. *Ber. schweiz. bot. Ges.* **53**, 317.
- HAGA, T. 1937a. *Cytologia*, **8**, 137.
- 1937b. *Jap. J. Genet.* **13**, 135.
- 1951. *Cytologia*, **16**, 243.
- HAGERUP, O. 1927. *Dansk bot. Ark.* **5**, 1.
- 1928. *Dansk bot. Ark.* **6**, 1.
- *— 1932. *Hereditas*, **16**, 19.
- 1933. *Hereditas*, **18**, 122.
- 1938. *Hereditas*, **24**, 258.

- HAGERUP, O. 1939. *Hereditas*, **25**, 185.
 — 1940. *Hereditas*, **26**, 399.
 — 1941a. *Planta*, **32**, 6.
 — 1941b. *Bot. Tidskr.* **45**, 385.
 — 1944. *Hereditas*, **30**, 152.
 — 1947. *K. dansk. vidensk. Selsk. Biol. Medd.* **20** (9), 1.
 HAIR, J. B. 1942. *Trans. roy. Soc. N.Z.* **71**, 271.
 HÅKANSSON, A. 1926. *Acta Univ. lund. n.s.* **2**, **21**, 471.
 — 1928. *Hereditas*, **10**, 277.
 — 1929. *Hereditas*, **13**, 1.
 — 1931. *Ber. dtsh. bot. Ges.* **49**, 228.
 — 1933. *Hereditas*, **18**, 199.
 — 1945. *Bot. Notiser*, 1945, 1.
 — 1946. *Acta Univ. lund.* **42**, 1.
 — 1949. *Hereditas*, **35**, 375.
 — 1952. *Bot. Notiser*, 1951, 143.
 — 1953. *Bot. Notiser*, 1953, 301.
 — 1954. *Hereditas*, **40**, 325.
 HAMACHER, H. 1947. *Mem. Inst. Osw. Cruz*, **45**, 373.
 HAMBLER, D. J. 1954. *Nature, Lond.* **173**, 547.
 HAMEL, J. L. 1937. *Rev. Cytol., Paris*, **2**, 392.
 — 1938. *Rev. Cytol., Paris*, **3**, 153.
 — 1939. *Bull. Mus. Hist. nat., Paris*, **11**, 271.
 — 1948a. *Bull. Mus. Hist. nat., Paris*, **20**, 198.
 — 1948b. *Bull. Mus. Hist. nat., Paris*, **20**, 558.
 — 1949a. *Bull. Mus. Hist. nat., Paris*, **21**, 749.
 — 1949b. *Bull. Mus. Hist. nat., Paris*, **21**, 752.
 — 1950. *Bull. Mus. Hist. nat., Paris*, **22**, 785.
 — 1951a. *Bull. Mus. Hist. nat., Paris*, **23**, 548.
 — 1951b. *Bull. Mus. Hist. nat., Paris*, **23**, 651.
 — 1952. *Bull. Mus. Hist. nat., Paris*, **24**, 588.
 — 1953. *Rev. Cytol., Paris*, **14**, 113.
 — 1954. *Mem. Soc. bot. Fr.*, 1953-4, 106.
 HANCOCK, B. L. 1942. *New Phytol.* **41**, 70.
 HANSEN, A. A. & HILL, H. D. 1953a. *Bull. Torrey bot. Cl.* **80**, 16.
 — 1953b. *Bull. Torrey bot. Cl.* **80**, 113.
 HANSON, C. H. 1953. *Agron. J.* **45**, 200.
 HAQUE, A. 1946. *Curr. Sci.* **15**, 78.
 — 1951. *Bot. Gaz.* **112**, 495.
 — 1952. *Rep. John Innes hort. Instn.* **42**, 47.
 HARA, S. 1942. *Jap. J. Genet.* **18**, 183.
 HARADA, I. 1942. *Jap. J. Genet.* **18**, 92.
 — 1943. *Jap. J. Genet.* **19**, 120.
 — 1944. *Jap. J. Genet.* **20**, 127.
 — 1947. *Cytologia*, **14**, 214.
 — 1948. *Jap. J. Genet.* **23**, 13.
 — 1951. *Jap. J. Genet.* **26**, 226.
 HARDAS, M. W. & JOSHI, A. B. 1954. *Indian J. Genet.* **14**, 47.
 HARLAN, J. R. 1949. *Amer. J. Bot.* **36**, 495.
 HARLAND, S. C. 1940. *Trop. Agriculture, Trin.* **17**, 53.
 HARLING, G. 1945. *Bot. Notiser*, 1945, 114.
 — 1946. *Svensk bot. Tidskr.* **40**, 257.
 — 1950. *Acta Hort. berg.* **15**, 135.
 — 1951a. *Acta Hort. berg.* **16**, 1.
 — 1951b. *Acta Hort. berg.* **16**, 73.
 HARMSÉN, L. 1939. *Medd. Grønland, Copenhagen*, **125**, 1.
 — 1943. *Medd. Grønland, Copenhagen*, **131**, 1.
 HARRISON, H. H. 1930. *Proc. Univ. Durham phil. Soc.* **8**, 252.
 HARRISON, J. W. H. 1920. *Trans. nat. Hist. Soc. Northumb.* **5**, 244.

- HARRISON, J. W. H. 1926. *Nature*, 117, 50.
HARTUNG, M. E. 1946. *Amer. J. Bot.* 33, 516.
HASEGAWA, N. 1932. *Cytologia*, 3, 350.
— 1933. *Bot. Mag., Tokyo*, 47, 901.
— 1934. *Cytologia*, 6, 68.
HASKELL, G. & MARKS, G. E. 1952. *New Phytol.* 51, 382.
HÄUSER, R. 1916. *Beitr. allg. Bot.* 1, 115.
HAWKES, J. G. 1944. *Bull. Imp. Bur. Pl. Br. & Genet.*
— 1954. *Ann. Mag. nat. Hist.*, ser. 12, 7, 689.
HEASLIP, M. B. 1951. *Ohio J. Sci.* 51, 62.
HECHT, A. 1949. *Bull. Torrey bot. Cl.* 76, 7.
HEILBORN, O. 1921. *Ark. Bot.* 17 (12).
— 1926. *Svensk bot. Tidskr.* 20, 414.
— 1927. *Hereditas*, 9, 59.
— 1939. *Hereditas*, 25, 224.
— 1941. *Svensk bot. Tidskr.* 35, 141.
HEIM, P. 1941. *Botaniste*, 31, 66.
— 1950. *Encycl. Mycol.* 1950.
HEIMANS, J. 1938. *Chron. Bot.* 4, 389.
HEIMLICH, L. F. 1927. *P.N.A.S.* 13, 113.
HEISER, C. B. 1947. *Madroño*, 9, 103.
— 1948. *Bull. Torrey bot. Cl.* 75, 512.
HEISER, C. B. & WHITAKER, T. W. 1948. *Amer. J. Bot.* 35, 179.
HEITZ, E. 1926. *Hab. Schr. Hamburg*, cit. T. 1927.
— 1927. *Abh. Naturw. Hamburg*, 21, 47.
— 1929. *Ber. dtsch. bot. Ges.* 47, 274.
— 1931a. *Planta*, 12, 775.
— 1931b. *Planta*, 15, 495.
— 1932. *Planta*, 18, 571.
HEITZ, E. & RESENDE, F. 1936. *Bol. Soc. Brot.* 11, 5.
HERIBERT-NILSSON, N. 1928. *Acta Univ. lund. n.s.* 2, 24, 89.
— 1935. *Hereditas*, 20, 339.
HESLOP-HARRISON, J. 1953. *Ann. Bot., Lond.* 17, 539.
HESLOP-HARRISON, Y. 1953a. *New Phytol.* 52, 22.
— 1953b. *Watsonia*, 3, 7.
HESLOT, H. 1953. *C.R. Acad. Sci., Paris*, 237, 433.
HEUSSER, C. 1938. *Ber. schweiz. bot. Ges.* 48, 562.
HEYN, A. N. J. 1936. *Landbouw.* 12, 11.
HICKS, G. C. 1929. *Bot. Gaz.* 88, 132.
HILL, H. D. & MYERS, W. M. 1948. *J. Amer. Soc. Agron.* 40, 466.
HIORTH, G. 1933. *Z.i.A.V.* 66, 106.
— 1941. *Z.i.A.V.* 79, 199.
HIRAYOSHI, I. 1937. *Jap. J. Genet.* 13, 215.
— 1942. *Seiken Zihô*, 1942, 88.
HIRAYOSHI, I. & MATSUMURA, M. 1952. *Jap. J. Breed.* 1, 219.
HIRAYOSHI, I. & NAKAMURA, Y. 1943. *Bot. & Zool., Tokyo*, 11, 73.
HJELMQVIST, H. 1951. *Bot. Notiser*, 1951, 180.
HOAR, C. S. 1931. *Bot. Gaz.* 92, 396.
HOAR, C. S. & HAERTL, E. J. 1932. *Bot. Gaz.* 93, 197.
HOCQUETTE, W. 1922. *C.R. Soc. Biol., Paris*, 87, 1301.
HOFELICH, A. 1935. *Jb. wiss. Bot.* 81, 541.
HOFFMANN, K. M. 1930. *Planta*, 10, 523.
HOFMEYER, J. D. J. 1945. *S. Afr. J. Sci.* 41, 225.
HOLLINGSHEAD, L. 1942. *Bull. Torrey bot. Cl.* 69, 41.
HOLLINGSHEAD, L. & BABCOCK, E. B. 1930. *Univ. Calif. Publ. Agr. Sci.* 6, 1.
HOLMGREN, J. 1919. *K. svenska VetenskAkad. Handl.* 59, No. 7.
HOLZER, K. 1952. *Öst. bot. Z.* 99, 118.
HOMBURG, O. 1931. *Skandinavien Flora*, Stockholm, 1931.
HOMEDES, R. J. 1943. *An. Esc. Perlit. agric. Barcelona*, 3.

- HOMEYER, H. 1932. *Planta*, **18**, 640.
 — 1935. *Bot. Jahrb.* **67**, 238.
 HONING, J. A. 1928. *Meded. LandbHoogeschool, Wageningen*, **32**, 1.
 HORN, K. 1938. *Avh. norske Vidensk Akad.* **5**, 1.
 — 1948. *Blyttia*, **6**.
 HOWARD, H. W. 1938. *J. Genet.* **35**, 383.
 — 1939. *Cytologia*, **10**, 77.
 — 1942. *J. Genet.* **43**, 105.
 — 1947. *Nature*, **159**, 66.
 HOWARD, H. W. & MANTON, I. 1946. *Ann. Bot., Lond.* **10**, 1.
 HRISHI, N. J. 1952. *Genetica*, **26**, 280.
 HRUBY, K. 1932. *Preslia*, **11**, 1.
 — 1933. *Vest. Kral. Ces. Spol. Nauk (Prague)*, **2**, 1.
 — 1934a. *Beih. bot. Zbl.* § A. **52**, 298.
 — 1934b. *Bull. int. Acad. Sci. Boheme*, **1**.
 — 1935. *Stud. Pl. physiol. Lab. Charles Univ.* **5**, 1.
 — 1941. *Vest. Kral. Ces. Spol. Nauk (Prague)*, **1941**, 9.
 — 1948. *J. Genet.* **48**, 316.
 HUBER, A. W. 1927. *Jb. wiss. Bot.* **66**, 359.
 HUMPHREY, L. M. 1932. *Amer. Nat.* **66**, 471.
 — 1934. *Amer. Nat.* **68**, 184.
 HUNTER, A. W. S. 1934. *Canad. J. Res.* **11**, 213.
 HUNZIKER, J. H. 1955. *Amer. J. Bot.* **42**, 459.
 HURCOMBE, R. 1946. *S. Afr. J. Sci.* **42**, 144.
 — 1947. *J. S. Afr. Bot.* **13**, 107.
 HURST, C. C. 1928. *Z.i.A.V. Suppl.* **2**, 866.
 — 1931. *Proc. Roy. Soc. B.* **109**, 126.
 HÜSER, W. 1930. *Planta*, **11**, 485.
 HUSKINS, C. L. 1927. *J. Genet.* **18**, 315.
 — 1930. *Genetica*, **12**, 531.
 HUSKINS, C. L. & LA COUR, L. 1930. *Amer. Nat.* **64**, 382.
 — — 1934. *J. Genet.* **28**, 387.
 HUSKINS, C. L. & SMITH, S. G. 1932. *J. Genet.* **25**, 241, 250.
 HUSTED, L. 1933. *Cytologia*, **5**, 109.
 — 1936. *Cytologia*, **7**, 396.
 HUTCHINSON, J. B. 1943. *Trop. Agric.* **20**, 4.
 HUTTLESTON, D. G. 1949. *Bull. Torrey bot. Cl.* **76**, 307.
 HYDE, B. B. 1953. *Amer. J. Bot.* **40**, 809.
- IBARRA, F. E. & LA PORTE, J. 1947a. *Rev. argent. Agron.* **14**, 94.
 — — 1947b. *Rev. argent. Agron.* **14**, 261.
 — — 1948. *Rev. argent. Agron.* **15**, 81.
 ICHIJIMA, K. 1926. *Genetics*, **11**, 590.
 — 1930. *Z.i.A.V.* **55**, 300.
 — 1934. *Proc. Imp. Acad. Tokyo*, **10**, 388.
 IKENO, S. 1929. *Jap. J. Bot.* **4**, 303.
 INARIYAMA, S. 1937. *Sci. Rep. Tokyo Univ. B.* **3**, 95.
 — 1944. *Jap. J. Genet.* **20**, 87.
 INOUE, S. 1952. *J. Sci. Hiroshima Univ. B. ser. 2*, **6**, 59.
 ISHIDA, Y. 1951. *Sci. Bull. Fac. Agric. Kyushu*, **13**, 49.
 ISHII, T. 1930. *Cytologia*, **1**, 335.
 *ISHIKAWA, M. 1916. *Bot. Mag. Tokyo*, **30**, 404.
 ISLAM, A. S. 1950. *J. Indian bot. Soc.* **29**, 79.
 — 1953. *Curr. Sci.* **22**, 118.
 ISLAM, A. S. & BATEN, A. 1952. *Nature*, **169**, 457.
 ISLAM, A. & SAHA, B. 1951. *Curr. Sci.* **20**, 332.
 ITO, T. 1942. *Cytologia*, **12**, 313.
 IVANOV, V. I. 1939. *C.R. Acad. Sci. U.R.S.S.* **24**, 486.

- IYENGAR, G. S. 1937. *J. Indian bot. Soc.* 16, 175.
 IYENGAR, K. 1937. *J. Indian bot. Soc.* 16, 99.
 IYENGAR, N. K. 1939. *Ann. Bot., Lond.* 3, 271.
- JACKSON, W. 1951. *Naturalist*, 1951, 114.
 JACOB, K. T. 1940. *Ann. Bot., Lond.* 4, 201.
 — 1941. *Bibliogr. genet.* 13, 225.
 JACOBSEN, P. 1954. *Hereditas*, 40, 252.
 JAKOB, K. M. 1949. *Madroño*, 10, 95.
 JAKOWSKA, S. 1949. *Amer. J. Bot.* 36, 98.
 JALAS, J. 1948. *Hereditas*, 34, 414.
 JAMES, L. E. 1951. *Contr. Dudley Herb.* 4, 63.
 JANAKI AMMAL, E. K. 1933. *Curr. Sci.* 1, 328.
 — 1934. *Cytologia*, 5, 453.
 — 1936. *Indian J. agric. Sci.* 6, 1.
 — 1938. *Nature*, 141, 925.
 — 1940a. *Nature*, 145, 464.
 — 1940b. *Nature*, 146, 839.
 — 1941. *J. Genet.* 41, 217.
 — 1948. *J. R. hort. Soc.* 73, 117.
 — 1950. *J. R. hort. Soc.* 75, 23.
 — 1951a. *J. R. hort. Soc.* 76, 269.
 — 1951b. *J. R. hort. Soc.* 76, 365.
 — 1952a. *J. R. hort. Soc.* 77, 287.
 — 1952b. *Yearb. Amer. Camellia Soc.* 1952, 106.
 — 1953a. *Curr. Sci.* 22, 4.
 — 1953b. *Indian J. Genet.* 12, 44.
 JANAKI AMMAL, E. K. & BRIDGWATER, M. 1951. *J. R. hort. Soc.* 76, 372.
 JANAKI AMMAL, E. K., ENOCH, I. C. & BRIDGWATER, M. 1950. *Rhodod. Yearb.* 5, 7.
 JANAKI AMMAL, E. K. & SAUNDERS, B. 1952. *Kew Bull.* (1952), 539.
 JANAKI AMMAL, E. K. & SELIGMAN, R. 1952. *J. R. hort. Soc.* 77, 221.
 JARETZKY, R. 1928a. *Jb. wiss. Bot.* 68, 1.
 — 1928b. *Jb. wiss. Bot.* 69, 357.
 — 1929. *Ber. dtsh. bot. Ges.* 47, (82).
 — 1930. *Planta*, 10, 120.
 — 1932. *Jb. wiss. Bot.* 76, 485.
 JEDRYCHOWSKA, A. & SROCZYNSKA, A. 1934. *Acta Soc. Bot. Polon.* 11, 423.
 JENKIN, T. J. & THOMAS, P. T. 1938. *J. Bot.* 76, 10.
 JENSEN, H. W. 1936. *Cytologia*, 7, 1.
 — 1937. *Cytologia, F.J.N.* 96.
 — 1939. *Cellule*, 48, 49.
 — 1941. *Cytologia*, 11, 591.
 — 1944. *Amer. Nat.* 78, 375.
 — 1951. *Cellule*, 54, 133.
 JENSEN, H. & LEVAN, A. 1941. *Hereditas*, 27, 220.
 JINNO, T. 1951a. *La Kromosomo*, 9-10, 360.
 — 1951b. *Jap. J. Genet.* 26, 133.
 JOHANSEN, D. A. 1929c. *P.N.A.S.* 15, 882.
 — 1929d. *Cactus & Succ. J., Los Angeles*, 1, 592.
 — 1931a. *Ann. Bot., Lond.* 45, 111.
 — 1931b. *Amer. J. Bot.* 18, 134.
 — 1931d. *Amer. J. Bot.* 18, 854.
 — 1932. *Amer. J. Bot.* 19, 779.
 — 1933a. *Bull. Torrey bot. Cl.* 60, 1.
 — 1933b. *Bot. Gaz.* 95, 177.
 — 1936. *Amer. J. Bot.* 23, 95.
 JOHN, C. M. & NARASINGA RAO, U. 1941. *Curr. Sci.* 10, 364.
 JOHNSON, B. L. 1945. *Bot. Gaz.* 107, 1.

- JOHNSON, B. L. & ROGLER, G. A. 1943. *Amer. J. Bot.* 30, 49.
- JOHNSON, D. S. 1910. *Jb. exp. Zool.* 9, 715.
- 1914. *Amer. J. Bot.* 1, 323.
- JOHNSON, H. 1940a. *Hereditas*, 26, 321.
- 1940b. *Svensk PappTidn.* 1940.
- 1941. *Acta Univ. lund.* NF. Avd. 2, 37, 3.
- 1942a. *Hereditas*, 28, 228.
- 1942b. *Hereditas*, 28, 306.
- 1944. *Bot. Notiser*, 1944, 85.
- JONES, K. L. 1943. *Bot. Gaz.* 105, 226.
- JONES, Q. 1951. *Contr. Gray Herb. Harv.* 173, 1.
- JÖRGENSEN, C. A. 1923. *Dansk bot. Tidskr.* 38, 81.
- 1927a. *Hereditas*, 9, 126.
- 1927b. *J. Genet.* 18, 63.
- 1928. *J. Genet.* 19, 133.
- JOSHI, A. B. & HARDAS, M. W. 1953. *Curr. Sci.* 22, 384.
- JOSHI, A. C. 1934. *Nature*, 134, 29.
- 1935. *J. Indian bot. Soc.* 14, 349.
- JUHL, H. 1952a. *Flora*, 139, 462.
- 1952b. *Ber. dtsh. bot. Ges.* 65, 330.
- JUNELL, S. 1934. *Symb. bot. upsaliens.* 1934, 1.
- KACHIDZE, N. 1929. *Planta*, 7, 482.
- 1935. *Bull. appl. Bot. Select.* 11, 99.
- KADRY, A. el R. 1951. *Svensk bot. Tidskr.* 45, 414.
- KAGAWA, F. 1929. *J. Coll. Agric. Tokyo*, 10, 173.
- KAMEMOTO, H. 1950. *Bull. Amer. Orchid Soc.* 19, 366.
- 1952. *Bull. Pacif. Orchid Soc. Hawaii*, 10, 141.
- KAMERAZ, A. J. 1940. *Soviet Plant Ind. Rec.* no. 4, 13.
- KANEZAWA, R. 1951. *Bull. Tokyo Univ. For.* 39, 21.
- KANO, T. 1929. *Proc. Crop. Sci. Soc. Japan*, 4, 15.
- KARASAWA, K. 1936. *Jap. J. Bot.* 8, 113.
- 1943. *Jap. J. Bot.* 12, 475.
- 1950. *Genetica*, 25, 188.
- KARPECHENKO, G. D. 1924a. *Bull. appl. Bot. Pl.-Breed.* 13, 4.
- 1924b. *J. Genet.* 14, 375.
- 1925. *Bull. appl. Bot. Pl.-Breed.* 14, 143.
- 1927. *Hereditas*, 9, 349.
- 1928. *Z.i.A.V.* 48, 1.
- 1930. *Proc. U.S.S.R. Congr. Genet.* 2, 277.
- 1938. *C.R. Acad. Sci. U.R.S.S.* 21, 59.
- KARPER, R. E. & CHISHOLM, A. T. 1936. *Amer. J. Bot.* 23, 369.
- KATAGIRI, S. 1952. *Jap. J. Breeding*, 1, 233.
- KATAYAMA, Y. 1936. *J. Coll. Agric. Tokyo*, 13, 431.
- KATO, Y. 1951. *La Kromosomo*, 9-10, 342.
- KATTERMANN, G. 1930. *Planta*, 12, 19.
- 1933. *Jb. wiss. Bot.* 78, 43.
- KAUSIK, S. B. 1938. *Ann. Bot., Lond.* 2, 899.
- 1939. *Proc. Indian Acad. Sci. B.* 9, 39.
- KAWAKAMI, I. 1930. *Bot. Mag. Tokyo*, 44, 319.
- KAWATANI, T. & OHNO, T. 1950. *Jap. J. Genet.* 25, 177.
- KAZAO, N. 1929. *Sci. Rep. Tōhoku Univ. (b) Biol.* 4, 543.
- KECK, D. D. 1945. *Amer. Midl. Nat.* 33, 128.
- KEDARNATH, S. 1950. *Indian J. Genet.* 10, 96.
- KESSELER, E. 1932. *Amer. J. Bot.* 19, 128.
- KHAN, I. R. 1951. *Pakist. J. Forestry*, 1, 326.
- KIHARA, H. 1924. *Mem. Coll. Sci. Kyoto*, 1, 1.
- 1927. *Bot. Mag. Tokyo*, 41, 124.

- KIHARA, H. 1929. *Jap. J. Genet.* 4, 55.
 — 1937. *Mem. Coll. Agric. Kyoto*, 41, 61.
 — 1954. *Cytologia*, 19, 336.
 KIHARA, H. & HIRAYOSHI, I. 1932. *Jap. Assoc. Adv. Sci. 8th Congr.* 1932, 363.
 KIHARA, H. & ONO, T. 1926. *Z. Zellforsch.* 4, 475.
 KIHARA, H. & YAMAMOTO, Y. 1935. *Agric. Hort.* 10, 2485.
 *KIHARA, H., YAMAMOTO, Y. & HOSONO, S. 1931. *A list of Chromosome Numbers of Plants cultivated in Japan.* Tokyo.
 KIKUCHI, M. 1926. *J. Soc. Agric. For. Sapporo*, p. 26.
 KING, J. R. & BAMFORD, R. 1937. *J. Hered.* 28, 279.
 KISHIMOTO, E. 1936. *Cont. Genet. Imp. Univ. Kyoto*, 105.
 — 1938. *Cytologia*, 9, 23.
 — 1941. *Bot. & Zool., Tokyo*, 9, 433.
 KISHORE, H. 1951. *Indian J. Genet.* 11, 217.
 KJELLMARK, S. 1934. *Bot. Notiser*, 1934, 136.
 KLIMOCKINA, L. V. 1940. *C.R. Acad. Sci. U.R.S.S.* 27, 584.
 KLINKOWSKI, M. & GRIESINGER, R. 1939. *Züchter*, 11, 313.
 KNOBLOCH, I. W. 1943. *Bull. Torrey bot. Cl.* 70, 467.
 — 1953. *Bull. Torrey bot. Cl.* 80, 131.
 KNOWLES, P. F. 1944. *Genetics*, 29, 128.
 KOBEL, F. 1927. *Arch. Klaus-Stift. VererbForsch.* 3, 1.
 — 1928. *Z.i.A.V. Suppl.* 2, 927.
 — 1929. *Züchter*, 1, 197.
 KOEPERICH, J. 1930. *Cellule*, 39, 307.
 KONDO, N. & MEGATA, M. 1943. *Seiken Zihô*, 2, 69.
 KÖNIG, D. 1939. *Planta*, 29, 361.
 KOOPMANS, A. 1951. *Genetica*, 25, 193.
 KOSHY, T. K. 1934. *J. R. micr. Soc.* 54, 104.
 KOSTOFF, D. 1936. *Z.i.A.V.* 72, 115.
 — 1937. *C.R. Acad. Sci. U.R.S.S.* 14, 213.
 — 1940. *Phytopath. Z.* 13, 91.
 KOSTOFF, D., DOGADKINA, H. & TICHONOWA, A. 1935. *Dokl. Acad. Nauk. U.R.S.S.* 3 (8), 401.
 KOSTOFF, D. & KENDALL, J. 1933. *Arch. Microbiol.* 4, 487.
 KOTLIAREWSKAJA, M. 1931. *Z. Zellforsch.* 14, 465.
 KOVALEV, N. V. 1939. *C.R. Acad. Sci. U.R.S.S.* 23, 284.
 KOZUCHOW, Z. A. 1925. *Bull. appl. Bot. Pl.-Breed.* 14, 96.
 — 1930. *Bull. appl. Bot. Pl.-Breed.* 23, 357.
 — 1934. *J. Inst. Bot. Acad. Sci., Ukraine*, 9, 63.
 KRAJEVOY, S. 1934. *C.R. Acad. Sci. U.R.S.S.* 4, 224.
 KRAPOVICKAS, A. 1949. *Lilloa*, 17, 179.
 — 1950. *Darwiniana*, 9, 248.
 — 1951a. *Bol. Soc. argent. Bot.* 4, 105.
 — 1951b. *Bol. Soc. argent. Bot.* 4, 107.
 KRAPOVICKAS, A. & KRAPOVICKAS, A. M. F. 1951. *Darwiniana*, 9, 612.
 KRAPOVICKAS, A. & RIGONI, V. A. 1951. *Rev. Invest. Agric.* 5, 289.
 KRAUSE, O. 1930. *Ber. dtsh. bot. Ges.* 48, 9.
 — 1931. *Planta*, 13, 29.
 KRENKE, N. P. 1930. *Pros. U.S.S.R. Congr. Genet.* 2, 319.
 KREUTER, E. 1930. *Planta*, 11, 1.
 KRIJTHE, N. 1939. *Tijdschr. PlZiekt.* 45, 63.
 KRISHNASWAMY, N. 1940. *Beih. bot. Zbl.* § A, 60, 1.
 KRISHNASWAMY, N. & AYYANGAR, R. 1935b. *Curr. Sci.* 3, 559.
 — 1935c. *Curr. Sci.* 4, 106.
 — 1940. *Curr. Sci.* 9, 461.
 — 1941. *Proc. Indian Acad. Sci.* § B, 13, 9.
 KRISHNASWAMY, N. & RAMAN, V. S. 1948a. *J. Indian bot. Soc.* 27, 77.
 — 1948b. *Curr. Sci.* 17, 153.

- KRISHNASWAMY, N., & RAMAN, V. S. 1949. *Curr. Sci.* **18**, 376.
 KRISHNASWAMY, N., RAMAN, V. S., SHETTY, B. V. & CHANDRASEKHARAN, P. 1954. *Curr. Sci.* **23**, 64.
 KRUCKEBERG, A. R. 1948. *Madroño*, **9**, 258.
 — 1955. *Amer. J. Bot.* **42**, 373.
 KRUG, C. A. 1934. *Züchter*, **6**, 166.
 — 1936. *Bol. Techn. S. Paulo*, **22**, 1.
 — 1937. *J. Genet.* **34**, 399.
 — 1943. *Bot. Gaz.* **104**, 602.
 KRUG, C. A. & ALVES, A. S. 1949. *J. Hered.* **40**, 133.
 KRUG, C. A. & BACCHI, O. 1943. *J. Hered.* **34**, 277.
 KRUPKO, S. 1953. *J. S. Afr. Bot.* **19**, 31.
 KUHN, E. 1928a. *Jb. wiss. Bot.* **68**, 382.
 — 1928b. *Ber. dtsh. bot. Ges.* **46**, 682.
 KUMAR, L. S. & ABRAHAM, A. 1941. *Proc. Indian Acad. Sci.*, § B. **14**, 509.
 — — 1942a. *Curr. Sci.* **11**, 58.
 — — 1942b. *Curr. Sci.* **11**, 112.
 — — 1942c. *Proc. Indian Acad. Sci.*, § B. **15**, 253.
 KUMAR, L. S. & RANADE, S. G. 1952. *Curr. Sci.* **21**, 75.
 KUMAR, L. S. & RANDIVE, K. 1941. *J. Univ. Bombay*, **10 B**, 31, 9.
 KUMAR, L. S. & SRINIVASAN, V. K. 1944. *Curr. Sci.* **13**, 15.
 KUMAR, L. S. & VISHVESHWARA, S. 1951. *Curr. Sci.* **20**, 211.
 KUMAR, L. S. & VISHVESHWARAIAH, V. 1952. *Nature*, **170**, 330.
 KUMAZAVA, M. & KIMURA, M. 1947. *Jap. J. Genet. Suppl.* **1**, 100.
 KURAKUBO, Y. 1940. *Bot. & Zool., Tokyo*, **8**, 1492.
 KURITA, H. 1940. *Bot. & Zool., Tokyo*, **8**, 72.
 KURITA, M. 1939. *Bot. Mag. Tokyo*, **53**, 505.
 KUWADA, Y. 1915. *Bot. Mag. Tokyo*, **29**, 83.
 — 1919. *J. Coll. Sci. Tokyo*, **39** (10).
 — 1928. *Bot. Mag. Tokyo*, **42**, 117.
 KUZMINA, N. A. 1935. *Bull. appl. Bot., U.S.S.R.* **11**, 81.
 LA COUR, L. F. 1931. *J. R. micr. Soc.* **51**, 119.
 — 1946. *Rep. John Innes Hort. Instn.* **36**, 19.
 — 1951a. *Heredity*, **5**, 37.
 — 1951b. *Rep. John Innes Hort. Instn.* **41**, 23.
 — 1952. *Rep. John Innes Hort. Instn.* **42**, 47.
 LAMM, R. 1937. *Svensk bot. Tidskr.* **31**, 217.
 LANG, A. 1940. *Bibliothec. Bot.* **118**.
 LANGLET, O. F. J. 1925. *Svensk bot. Tidskr.* **19**, 215.
 — 1927a. *Svensk bot. Tidskr.* **21**, 1.
 — 1927b. *Svensk bot. Tidskr.* **21**, 397.
 — 1928. *Svensk bot. Tidskr.* **22**, 169.
 — 1932. *Svensk bot. Tidskr.* **26**, 381.
 — 1934. *Svensk Skog. Tidskr.* **1934**, 87.
 — 1936. *Svensk bot. Tidskr.* **30**, 288.
 LANGLET, O. F. J. & SÖDERBERG, E. 1927. *Acta Hort. berg.* **9**, 85.
 LAPIN, W. 1937a & b. *Trud. vsesoj. nauch. issled. Inst. vlazn. subtrop.* **1**, 1 & 69.
 — 1939. *C.R. Acad. Sci. U.R.S.S.* **23**, 84.
 LARSEN, C. S. & WESTERGAARD, M. 1938. *J. Genet.* **36**, 523.
 LARSEN, K. 1953. *Bot. Tidskr.* **50**, 91.
 LARTER, L. N. H. 1932. *J. Genet.* **26**, 255.
 — 1935. *J. Genet.* **31**, 297.
 DE LATTIN, G. 1951. *Naturwiss.* **38**, 531.
 LAWALRÉE, A. 1943. *Cellule*, **49**, 337.
 LAWRENCE, W. E. 1945. *Amer. J. Bot.* **32**, 298.
 — 1947. *Amer. J. Bot.* **34**, 538.
 LAWRENCE, W. J. C. 1929. *J. Genet.* **21**, 125.
 — 1930. *Genetica*, **12**, 269.

- LAWRENCE, W. J. C. 1931a. *J. Genet.* **24**, 257.
 — 1931b. *Cytologia*, **2**, 352.
 — 1931. *Genetica*, **13**, 183.
 — 1936. *Genetica*, **18**, 109.
 LAWRENCE, W. J. C., SCOTT-MONCRIEFF, R. & STURGESE, V. C. 1939. *J. Genet.* **38**, 295.
 LAWS, D. 1930. Diss. Univ. Berlin.
 LAY, K. K. 1950. *Ann. Mo. Bot. Gard.* **37**, 315.
 LECHTOVA-TRNKA, M. 1931. *Botaniste*, **23**, 301.
 LEDINGHAM, G. F. 1940. *Genetics*, **25**, 1.
 LEE, C. L. 1954. *Amer. J. Bot.* **41**, 545.
 LEHMANN, E. 1944. *Jb. wiss. Bot.* **91**, 395.
 LEIN, A. 1948. *Züchter*, **19**, 6.
 LELIVELD, J. A. 1933. *Genetica*, **15**, 425.
 LENZ, L. W. 1950. *El Aliso*, **2**, 317.
 LEONCINI, M. L. 1951. *Caryologia*, **3**, 336.
 — 1952. *Caryologia*, **4**, 367.
 LESZCZAK, W. 1950. *Acta Soc. Bot. Polon.* **20**, 647.
 LEUNG, T. C. & LI, H. W. 1949. *J. Sugarcane Res. Taiwan*, **3**, 211.
 LEVAN, A. 1931. *Hereditas*, **15**, 347.
 — 1932. *Hereditas*, **16**, 257.
 — 1934. *Hereditas*, **18**, 349.
 — 1935. *Hereditas*, **20**, 289.
 — 1936. *Hereditas*, **22**, 1.
 — 1937a. *Hereditas*, **23**, 99.
 — 1937b. *Hereditas*, **23**, 317.
 — 1940a. *Hereditas*, **26**, 317.
 — 1940b. *Hereditas*, **26**, 353.
 — 1941. *Hereditas*, **27**, 243.
 — 1942a. *Hereditas*, **28**, 245.
 — 1942b. *Hereditas*, **28**, 345.
 — 1943. *Hereditas*, **29**, 255.
 — 1944a. *Hereditas*, **30**, 217.
 — 1944b. *Hereditas*, **30**, 401.
 — 1949. *Proc. 8th Int. Congr. Genet.* **46**.
 LEVAN, A. & LOVE, A. 1942. *Hereditas*, **28**, 495.
 LEVAN, A. & STEINEGGER, E. 1947. *Hereditas*, **33**, 552.
 LEVYNS, M. R. 1934. *Ann. Bot., Lond.* **48**, 355.
 LEWIS, H. 1945. *Brittonia*, **5**, 276.
 — 1951. *Evolution*, **5**, 142.
 — 1953a. *Evolution*, **7**, 1.
 — 1953b. *Evolution*, **7**, 102.
 LEWIS, H., EPLING, C., MEHLQUIST, G. A. L. & WYCKOFF, C. G. 1951. *Ann. Mo. Bot. Gard.* **38**, 101.
 LEWIS, H. & ERNST, W. R. 1953. *Madroño*, **12**, 89.
 LEWIS, H. & LEWIS, M. 1953. *Madroño*, **12**, 33.
 LEWIS, H. & SNOW, R. 1951. *Madroño*, **11**, 141.
 *LEWITZKY, G. A. 1931a. *Bull. appl. Bot., Pl.-Breed.* **27**, 19.
 * — 1931b. *Bull. appl. Bot., Pl.-Breed.* **27**, 187.
 — 1934. *C.R. Acad. Sci. U.R.S.S.* **1**, 84.
 — 1940. *Bot. J. U.S.S.R.* **25**, 292.
 LEWITZKY, G. A. & KUZMINA, N. A. 1927. *Bull. appl. Bot., Pl.-Breed.* **17**, 3.
 LI, C. H. & LI, H. W. 1943. *Chinese J. Sci. Agric.* **1**, 139.
 LI, H. W. & LEE, C. L. 1948. *J. Sugarcane Res. Taiwan*, **2**, 5.
 LI, H. W. & MA, T. H. 1951a. *Rep. Taiwan Sugar Exp. Sta.* **7**, 47.
 — 1951b. *Proc. 7th Congr. Int. Soc. Sugarcane Techn.* 1950, 277.
 LILJENFELD, F. A. 1936. *Jap. J. Bot.* **8**, 119.
 LILJENFELD, F. A. & KIHARA, H. 1934. *Cytologia*, **6**, 87.
 LILJEFORS, A. 1934. *Svensk bot. Tidskr.* **28**, 290.

- LINCOLN, F. B. & McCANN, L. P. 1937. *Proc. Amer. Soc. hort. Sci.* **34**, 26.
- LINDENBEIN, W. 1932. *Ber. dtsch. bot. Ges.* **50**, 399.
- 1937. *Ang. Bot.* **19**, 313.
- LINDQVIST, K. 1950. *Hereditas*, **36**, 94.
- LINDSAY, R. H. 1930. *Amer. J. Bot.* **17**, 152.
- LINDSCHAU, M. 1933. *Planta*, **20**, 566.
- LINDSTROM, E. W. 1929. *J. Hered.* **20**, 23.
- LITARDIÈRE, R. DE. 1926. *Bull. Soc. bot. Fr.* **73**, 218.
- 1938. *Rev. Cytol., Paris*, **3**, 134.
- 1943. *Boissiera*, **7**, 155.
- 1947. *C.R. Acad. Sci., Paris*, **224**, 981.
- 1948a. *Candollea*, **11**, 175.
- 1948b. *C.R. Acad. Sci., Paris*, **226**, 1327.
- 1948c. *C.R. Acad. Sci., Paris*, **227**, 1071.
- 1949a. *C.R. Acad. Sci., Paris*, **228**, 349.
- 1949b. *C.R. Acad. Sci., Paris*, **228**, 1786.
- 1950. *Bol. Soc. Brot.* **24**, 79.
- LITARDIÈRE, R. DE & DOULAT, E. 1942. *Bull. Soc. bot. Fr.* **89**, 123.
- LJUNGDAHL, H. 1922. *Svensk bot. Tidskr.* **16**, 103.
- LONGLEY, A. E. 1924a. *Amer. J. Bot.* **11**, 249.
- 1924b. *Amer. J. Bot.* **11**, 295.
- 1925. *J. Wash. Acad. Sci.* **15**, 347.
- 1927b. *Science*, **66**, 566.
- 1932. *J. agric. Res.* **44**, 317.
- 1933. *J. agric. Res.* **46**, 217.
- 1937. *J. agric. Res.* **54**, 835.
- LONGLEY, A. E. & DARROW, G. M. 1924. *J. agric. Res.* **27**, 737.
- LONGLEY, A. E. & SANDO, W. J. 1930. *J. agric. Res.* **40**, 683.
- LOPANE, F. 1951. *Caryologia*, **4**, 44.
- LORENZO-ANDREU, A. 1951. *An. Estac. Exp. Aula Dei*, **2**, 195.
- LORENZO-ANDREU, A. & GARCIA-SANZ, P. 1950. *An. Estac. Exp. Aula Dei*, **2**, 12.
- LORZ, A. 1937. *Cytologia*, **8**, 241.
- LOTFY, T. 1951. *Nature*, **168**, 338.
- LÖVE, A. 1942. *Hereditas*, **28**, 289.
- 1944a. *Bot. Notiser*, 1944, 237.
- 1944b. *Hereditas*, **30**, 1.
- 1944c. *Svensk bot. Tidskr.* **38**, 381.
- 1951. *Bot. Notiser*, 1951, 229.
- 1952. *Hereditas*, **38**, 11.
- 1954. *Svensk bot. Tidskr.* **48**, 211.
- *LÖVE, A. & LÖVE, D. 1942. *Bot. Notiser*, 1942, 19.
- 1944a. *Ark. Bot.* **31 B** (1), 1.
- * — 1944b. *Ark. Bot.* **31 A** (12), 1.
- 1947. *Rep. Dep. Agric. Univ. Inst. appl. Sci. Iceland*, Ser. B, **2**, 1.
- * — 1948. Chromosome Numbers of Northern Plant Species, Reykjavik.
- 1951. *Svensk bot. Tidskr.* **45**, 368.
- 1954. *Amer. Midl. Nat.* **52**, 88.
- LÖVE, D. 1942. *Svensk bot. Tidskr.* **36**, 262.
- 1953. *Hereditas*, **39**, 225.
- LOVE, R. M. 1948. *Amer. J. Bot.* **35**, 358.
- 1954. *Amer. J. Bot.* **41**, 107.
- LÖVKVIST, B. 1947. *Hereditas*, **33**, 421.
- LUBBERT, G. 1951. *Beitr. Biol. Pfl.* **28**, 254.
- LUCKWILL, L. C. 1943. *Aberd. Univ. Stud.* no. 120.
- LUTKOV, A. N. 1930. *Proc. U.S.S.R. Congr. Genet.* **2**, 353.
- McAULAY, A. L. & CRUICKSHANK, F. D. 1937. *Pap. roy. Soc. Tasm.* 1937, 41.
- McAULAY, A. L., CRUICKSHANK, F. D. & BRETT, R. G. 1936. *Nature*, **138**, 550.

- McCULLAGH, D. 1934. *Genetica*, 16, 1.
- McFADDEN, E. S. & SEARS, E. R. 1946. *J. Hered.* 37, 81 & 107.
- — 1947. *J. Amer. Soc. Agron.* 39, 1011.
- *MCKAY, J. W. 1930. *Bot. Gaz.* 89, 416.
- 1931. *Univ. Calif. Publ. Bot.* 16, 339.
- MCKAY, J. W. & MCKAY, H. H. 1941. *Amer. J. Bot.* 28, suppl. 4.
- MACKELVEY, S. D. & SAX, K. 1933. *J. Arnold Arbor.* 14, 76.
- MCLEISH, J. 1953. *Heredity*, 6 (suppl.), 125.
- MACMAHON, B. 1936. *Cellule*, 45, 209.
- MACMILLAN, C. 1949. *Madroño*, 10, 95.
- MCMINN, H. E. 1951. *Madroño*, 11, 33.
- MCQUADE, H. A. 1949. *Ann. Mo. Bot. Gdn.* 36, 433.
- MAJUMDAR, A. 1953. *Caryologia*, 5, 306.
- MAKUSHINA, E. N. 1938. *C.R. Acad. Sci. U.R.S.S.* 21, 345.
- MALHEIROS, N. 1942. *Agron. lusit.* 4, 231.
- MALHEIROS, N. & GARDÉ, A. 1947. *Agron. lusit.* 9, 75.
- MALVESIN-FABRE, G. & EYMÉ, J. 1949. *C.R. Acad. Sci., Paris*, 228, 2050.
- MANGELSDORF, P. C. & REEVES, R. G. 1939. *Texas Agric. Exp. Sta. Bull.* 574, 75.
- MANGENOT, G. 1947. *C.R. Acad. Sci., Paris*, 224, 587.
- MANSHARD, E. 1936. *Planta*, 25, 364.
- MANTON, I. 1932. *Ann. Bot., Lond.* 46, 509.
- 1937. *Ann. Bot., Lond.* n.s. 1, 439.
- 1949. *Watsonia*, 1, 36.
- MAKINO, I. 1951. *La Kromosomo*, 8, 318.
- MARCHAL, E. 1920. *Mem. Acad. R. Belg. Cl. sci.* II, 4, 3.
- MARKS, G. E. 1950. *Rep. John Innes Hort. Instn.* 40, 7.
- 1952. *Rep. John Innes Hort. Instn.* 42, 47.
- MARSHAK, J. A. G. 1934. *Amer. J. Bot.* 21, 592.
- MARTINI, E. 1939. *Nuovo G. bot. ital.* 46, 197.
- MARTINOLI, G. 1939. *Nuovo G. bot. ital.* 46, 259.
- 1940. *Nuovo G. bot. ital.* 47, 287.
- 1942. *Nuovo G. bot. ital.* 49, 472.
- 1943. *Nuovo G. bot. ital.* 50, 1.
- 1948. *Nuovo G. bot. ital.* 55, 235.
- 1949. *Caryologia*, 1, 329.
- 1950a. *Caryologia*, 3, 72.
- 1950b. *Caryologia*, 3, 156.
- 1951. *Caryologia*, 4, 86.
- 1953. *Caryologia*, 5, 253.
- MARTZENITZINA, K. K. 1927. *Bull. appl. Bot., Pl.-Breed.* 17, 253.
- MASIMA, I. 1947. *Jap. J. Genet.* suppl. 1, 122.
- MASON, C. T. 1952. *Univ. Calif. Publ. Bot.* 25, 455.
- MATHER, K. 1932. *J. Genet.* 26, 129.
- 1934. *Hereditas*, 19, 303.
- 1935. *Cytologia*, 6, 354.
- 1937. *Genetica*, 19, 143.
- MATHEWS, A. C. 1932. *J. Elisha Mitchell Sci. Soc.* 48, 101.
- MATSUURA, H. 1935. *J. Fac. Sci. Hokkaido Univ.* 3 (5), 219.
- 1937. *Bot. & Zool, Tokyo*, 5, 15.
- MATSUURA, H. & OKUNO, S. 1936. *Jap. J. Genet.* 12, 42.
- — 1943. *Cytologia*, 13, 1.
- *MATSUURA, H. & SUTO, T. 1935. *J. Fac. Sci. Hokkaido Univ.* 5 (5), 33.
- MATSUURA, H. & TOYOHUKO, T. 1937. *Jap. J. Genet.* 13, 21.
- *MAUDE, P. F. 1939. *New Phytol.* 38, 1.
- 1940. *New Phytol.* 39, 17.
- MAUGINI, E. 1950. *Caryologia*, 3, 221.
- 1952. *Caryologia*, 5, 101.
- 1953a. *Caryologia*, 5, 167.

- MAUGINI, E. 1953b. *Caryologia*, **5**, 282.
 — 1953c. *Caryologia*, **5**, 313.
 MECHELKE, F. 1954. *Kulturpflanze*, **2**, 143.
 MEDVEDEVA, G. B. 1935. *Z.i.A.V.* **70**, 170.
 — 1936. *J. Bot. U.R.S.S.* **21**, 533.
 — 1937. *Biol. J.* **6**, 93.
 MEGATA, M. 1941. *Eine Liste von Chromosomenzahlen bei Kakteen und anderen Sukkulente*, Imp. Univ., Kyoto.
 MEHLQUIST, G. A. L. 1947. *Bull. Mo. Bot. Gdn.* **35**, 211.
 — 1952. *Cymbidium Soc. News*, **7**, 17.
 MEHLQUIST, G. A. L., BLODGETT, C. O. & BRUSCIA, L. 1943. *J. Hered.* **34**, 187.
 MEHRA, P. N. 1934. *Curr. Sci.* **3**, 11.
 — 1946. *Proc. Nat. Acad. Sci. India*, Ser. B, **16**, 259.
 MEHRA, P. N. & KHOSHOO, T. N. 1948a. *Curr. Sci.* **17**, 242.
 — 1948b. *Proc. 34th Indian Sci. Congr.* pt. 3, 167.
 MELCHERS, G. 1935. *Z.i.A.V.* **69**, 263.
 MELDERIS, A. 1930. *Acta Hort. bot. Univ. latv.* **5**, 1.
 MELDERIS, A. & VIKSNE, A. 1931. *Acta Hort. bot. Univ. latv.* **6**, 90.
 MELINOSI, R. 1937. *Monit. Zool. ital.* **47**, 318.
 MENDES, A. J. T. 1945. *Rev. Agric. Piracicaba*, **20**, 412.
 — 1947. *Bragantia*, **7**, 257.
 MENDES, L. O. T. 1946. *Bol. Tecn. Inst. Agron. Norte*, **7**, 1.
 MENSINKAI, S. W. 1939a. *Ann. Bot., Lond.* **3**, 763.
 — 1939b. *Cytologia*, **10**, 59.
 — 1940. *J. Genet.* **39**, 1.
 MENZEL, M. Y. 1950. *Amer. J. Bot.* **37**, 25.
 — 1951. *Proc. Amer. Phil. Soc.* **95**, 133.
 MEREMINSKI, H. 1936. *Bull. Acad. Polon. Ser. B, Sci. Nat.* **53**.
 MESSERI, A. 1928. *Nuovo G. bot. ital.* **34**, 1037.
 — 1931. *Nuovo G. bot. ital.* **38**, 409.
 MEURMAN, O. 1924. *Soc. Sci. Fenn. Comment. Biol.* **2**, (2).
 — 1925. *Soc. Sci. Fenn. Comment. Biol.* **2**, (3).
 — 1928. *Hereditas*, **11**, 289.
 — 1929a. *Hereditas*, **12**, 179.
 — 1929b. *J. Genet.* **21**, 85.
 — 1930. *Memor. Soc. Fauna Flor. fenn.* **6**, 95.
 — 1931. *Rep. 5th Int. Bot. Congr.* 235.
 — 1933. *Hereditas*, **18**, 145.
 MEURMAN, O. & SUOMALAINEN, E. 1946. *Ann. Ak. Sci. Fenn.* **4** (11).
 MEURMAN, O. & THERMAN, E. 1939. *Cytologia*, **10**, 1.
 MEYER, J. R. 1944. *Genetics*, **29**, 199.
 MICHALSKA, A. 1953. *Acta Soc. Bot. Polon.* **22**, 169.
 MIDUNO, T. 1938. *Cytologia*, **8**, 505.
 — 1939. *Cytologia*, **9**, 447.
 — 1940. *Cytologia*, **11**, 179.
 — 1943. *Jap. J. Genet.* **19**, 123.
 — 1954. *Cytologia*, **19**, 239.
 MIÈGE, J. 1939. *Bull. Soc. Hist. nat. Afr. N.* **30**, 223.
 MILLER, E. W. 1930. *Proc. Univ. Durham Phil. Soc.* **8**, 267.
 MILOVIDOV, P. F. 1932. *Preslia*, **11**, 62.
 — 1941. *Planta*, **32**, 38.
 MIMEUR, G. 1950. *Bull. Mus. Hist. nat., Paris*, **22**, 130.
 MIRANDA, F. 1931. *Bol. Soc. esp. Hist. nat.* **31**, 403.
 MITRA, J. 1947. *J. Indian bot. Soc.* **26**, 105.
 — 1949. *Proc. 36th Indian Sci. Congr.* pt. 3, 140.
 MITSUKURI, Y. 1947. *Jap. J. Genet.* **22**, 18.
 MITSUKURI, Y. & HAYASHI, M. 1951. *Jap. J. Genet.* **26**, 225.
 MIYAJI, Y. 1929. *Cytologia*, **1**, 28.
 — 1930. *Planta*, **11**, 631.

- MIYAKI, K. 1934. *Ann. Bot., Lond.* **17**, 351.
- MODILEWSKI, J. 1934. *Visn. Kiewsk. Botan. Sad.* **17**, 3.
- 1937. *J. Bot. Acad. Sci. Ukr.* **13-14**, 63.
- MOFFETT, A. A. 1931a. *J. Pomol.* **9**, 100.
- 1931b. *Proc. Roy. Soc. Ser. B*, **108**, 423.
- 1932a. *Cytologia*, **4**, 26.
- 1932b. *J. Genet.* **25**, 315.
- 1936. *Cytologia*, **7**, 490.
- 1944. *Rhod. agric. J.* **41**, 11.
- * MOFFETT, A. A. & HURCOMBE, R. 1949. *Heredity*, **3**, 369.
- MOHRBUTTER, C. 1936. *Planta*, **26**, 64.
- DE MOL, W. E. 1922. *Proc. Kon. Akad. Wetensch. Amst.* **25**, 216.
- MOOKERJEA, A. 1951. *Curr. Sci.* **20**, 328.
- MOORE, R. J. 1946. *Canad. J. Res.* **24 C**, 66.
- 1947. *Amer. J. Bot.* **34**, 527.
- MOORE, R. J. & FRANKTON, C. 1954. *Canad. J. Bot.* **32**, 182.
- MOORE, R. J. & LINDSAY, D. R. 1953. *Canad. J. Bot.* **31**, 152.
- MORINAGA, T. 1929. *Cytologia*, **1**, 16.
- MORINAGA, T., FUKUSHIMA, E., KANO, T. & YAMASAKI, Y. 1929. *Bot. Mag., Tokyo*, **43**, 589.
- MORINAGA, T. & FUKUSHIMA, E. 1931. *Bot. Mag., Tokyo*, **45**, 140.
- MORINAGA, T. & KURUJAMA, H. 1937. *Cytologia, F.J.N.* 967.
- MÖRAN, R. 1951. *Bull. S. Calif. Acad. Sci.* **50**, 57.
- MORIYA, A. & KONDO, A. 1949a. *Jap. J. Genet.* **25**, 126.
- 1949b. *Jap. J. Genet.* **25**, 131.
- MORLEY, T. 1949. *Madroño*, **10**, 95.
- MORRISON, J. W. 1952. *Rep. John Innes Hort. Instn.* **42**, 47.
- MORTON, J. K. 1955. *New Phytol.* **54**, 68.
- MOYER, L. S. 1934. *Bot. Gaz.* **95**, 678.
- 1936. *Bot. Gaz.* **97**, 860.
- MUKHERJEE, S. K. 1950. *Nature*, **166**, 196.
- 1952a. *Sci. & Cult.* **18**, 91.
- 1952b. *Curr. Sci.* **21**, 77.
- MÜLLER, C. 1912. *Arch. Zellforsch.* **8**, 1.
- MULLER, F. S. 1945. *Publ. Univ. Pretoria*, **2**, 27.
- MÜNTZING, A. 1931. *Hereditas*, **15**, 166.
- 1932. *Hereditas*, **16**, 73, 105.
- 1937a. *Hereditas*, **23**, 113.
- 1937b. *Hereditas*, **23**, 401.
- 1937c. *Cytologia, F.J.N.* 211.
- 1939. *Hereditas*, **25**, 387.
- 1943a. *Hereditas*, **29**, 91.
- 1948. *Heredity*, **2**, 49.
- 1951. *Hereditas*, **37**, 17.
- 1954. *Hereditas*, **40**, 459.
- MUNTZING, A. & MÜNTZING, G. 1941. *Bot. Notiser*, 1941, 237.
- MURTHY, K. L. 1934. *Curr. Sci.* **3**, 258.
- MURTHY, S. N. K. 1933. *J. Mysore Univ.* **7**, 1.
- MUTO, A. 1929. *Mem. Coll. Sci. Kyoto, Ser. B*, **4**, 265.
- MYERS, W. M. 1939. *J. Hered.* **30**, 499.
- 1941. *J. agric. Res.* **63**, 649.
- 1944. *J. agric. Res.* **68**, 21.
- * — 1947. *Bot. Rev.* **13**, 319.
- MYERS, W. M. & HILL, H. D. 1947. *Bull. Torrey bot. Cl.* **74**, 99.
- NAGAI, K. & SASAOKA, T. 1930. *Jap. J. Genet.* **5**, 151.
- NAGAO, M. 1941. *Jap. J. Genet.* **17**, 109.
- NAGAO, S. 1929. *Mem. Coll. Sci. Kyoto, Ser. B*, **4**, 177.

- NAGAO, S. 1933. *Mem. Coll. Sci. Kyoto*, Ser. B, 8, 81.
 — 1938. *Comment. Pap. Agron.* Akemine.
 — 1941. *J. Sapporo Soc. Agric. For.* 32, 28.
 NAGAO, S. & MASIMA, I. 1943a. *Jap. J. Genet.* 19, 110.
 — 1943b. *Trans. Sapporo N.H. Soc.* 17, 131.
 NAKAJIMA, G. 1930. *Jap. J. Genet.* 5, 172.
 — 1931. *Bot. Mag. Tokyo*, 45, 7.
 — 1933. *Jap. J. Genet.* 9, 1.
 — 1936. *Jap. J. Genet.* 12, 211.
 — 1937. *Cytologia, F.J.N.* 282.
 — 1942. *Cytologia*, 12, 262.
 — 1944. *Jap. J. Genet.* 20, 131.
 — 1954. *Bot. Mag. Tokyo*, 67, 69.
 NAKAMORI, E. 1933. *Proc. imp. Acad. Japan*, 9, 340.
 NAKAMURA, M. 1941. *Studia Citrol.* 10, 12.
 — 1942. *J. Hort. Assoc.* 13, 30.
 NAKAMURA, T. 1929. *Mem. Coll. Sci. Kyoto*, Ser. B, 4, 353.
 NAKAMURA, W. 1934. *Bull. Kagoshima Coll. Agric. For.* 1, 11.
 NAMIKAWA, J. & HIGASHI, M. 1928. *Bot. Mag. Tokyo*, 42, 436.
 NANDI, H. K. 1936. *J. Genet.* 33, 327.
 NANNFELDT, J. A. 1937. *Bot. Notiser*, 1937, 238.
 — 1938. *Svensk bot. Tidskr.* 32, 295.
 — 1940. *Symb. bot. upsaliens.* 4, no. 4.
 NARASINGA RAO, V. 1936. *Curr. Sci.* 4, 654.
 NASCIMENTO, A. C. 1941. *Bol. Soc. brasil. Agron.* 4, 67.
 NATIVIDADE, J. V. 1937. *Publ. Dir. Serv. Flor. agric.* 4, 74.
 NAVASHIN, M. 1930. *Nature*, 126, 604.
 NAVASHIN, M. & GERASSIMOVA, H. 1941. *C.R. Acad. Sci. U.R.S.S.* 31, 43.
 NAWA, N. 1928. *Bot. Mag. Tokyo*, 42, 33.
 NEBEL, B. R. 1929. *Gartenbauwiss.* 1, 549.
 NEGODI, G. 1930. *Ann. di Bot.* 18, 325.
 — 1935. *Atti Soc. Nat. Mat. Modena*, 67, 3.
 — 1936a. *Riv. Biol.* 20, 15.
 — 1936b. *Arch. bot., Forli*, 12, 82.
 — 1937. *Nuovo G. bot. ital.* 44, 667.
 — 1939. *Sci. genet.* 1, 168.
 — 1940. *Sci. genet.* 2, 1.
 — 1951. *Sci. genet.* 4, 94.
 NEMEC, B. 1910. *Das Problem der Befruchtungsvorgänge.* Berlin.
 NETO, E. 1948. *Herbertia*, 15, 25.
 NEUMANN, M. 1935. *Öst. Bot. Z.* 84, 1.
 NEVES, J. DE B. 1939. *Boll. Soc. Brot.* 13, 547.
 — 1944. *Diss. Univ. Coimbra.*
 — 1950. *Bol. Soc. Brot.* 24, 335.
 — 1952. *Bol. Soc. Brot.* 26, 1.
 — 1953. *Bol. Soc. Brot.* 27, 203.
 NEWCOMER, E. H. 1941. *Proc. Amer. Soc. hort. Sci.* 38, 468.
 NEWTON, W. C. F. 1924. *Ann. Bot., Lond.* 38, 197.
 — 1927. *J. Linn. Soc. (Bot.)*, 47, 339.
 NIELSEN, E. L. 1939. *Amer. J. Bot.* 26, 366.
 — 1944. *J. agric. Res.* 69, 327.
 NIELSEN, E. L. & HUMPHREY, L. M. 1937. *Amer. J. Bot.* 24, 276.
 NIELSEN, E. L. & ROGLER, G. A. 1952. *Amer. J. Bot.* 39, 343.
 NIELSEN, N. 1924. *Hereditas*, 5, 378.
 NIETSCHE, H. 1941. *Öst. Bot. Z.* 90, 31.
 NIKOLAJEWA, A. 1923. *Bull. appl. Bot., Pl.-Breed.* 13, 33.
 NIRULA, R. L. 1945. *Proc. Indian Acad. Sci.* § B, 21, 174.
 NISHIYAMA, I. 1936. *Cytologia*, 7, 276.

- NISHIYAMA, I. & KONDO, N. 1942. *Seiken Zihô*, 1, 26.
- NESSEN, Ø. 1950. *Agron. J.* 42, 136.
- NITZSCHKE, J. 1914. *Beitr. Biol. Pfl.* 12, 223.
- NOACK, K. L. 1937. *Biol. Zbl.* 57, 383.
- 1939. *Z.i.A.V.* 76, 569.
- NOBS, M. A. 1942. In McMinn, H. E., *Ceanothus*. California.
- NODA, K. 1946. *Jap. J. Genet.* 21, 93.
- NOGUCHI, T. 1936. *Bot. Mag. Tokyo*, 50, 225.
- NORDENSKIÖLD, H. 1937. *Hereditas*, 23, 304.
- 1941. *Bot. Notiser*, 1941, 12.
- 1951. *Hereditas*, 37, 325.
- NYGREN, A. 1946. *Hereditas*, 32, 131.
- 1954. *Hereditas*, 40, 377.
- OCCHIONI, P. 1945. *Rodriguesia*, Rio de Jan. 9, 37.
- OEHM, G. 1924. *Beih. bot. Zbl.* § 1, 40, 237.
- OFFERLINS, F. I. M. 1935. Diss. Utrecht.
- OGAWA, K. 1929. *Mem. Coll. Sci. Kyoto*, 4, 309.
- OHGA, T. & SINOTO, Y. 1932. *Bot. Mag. Tokyo*, 46, 311.
- OKAWA, K. 1942. *Jap. J. Genet.* 18, 157.
- OTNUMA, T. 1949. *Jap. J. Genet. Suppl.* 2, 29.
- OKABE, S. 1928. *Sci. Rep. Tôhoku Univ. Ser.* 4, 3, 733.
- 1934. *Bot. Mag. Tokyo*, 48 (7).
- 1937. *Cytologia*, F.J.N. 527.
- OKE, J. G. 1950. *Proc. Indian Acad. Sci.* § B, 32, 227.
- OKSIUK, P. 1929. *Mem. phys.-mat. Acad. Sci. Ukr.* 15, 37.
- 1935. *J. Bot. Acad. Sci. Ukr.* 4, 15.
- OKUNO, S. 1937. *Cytologia*, F.J.N. 897.
- 1940. *Jap. J. Genet.* 16, 164.
- OLDEN, E. J. 1945. *Svensk Pomol. Foren. Arsskr.* 46, 105.
- OLESON, E. M. 1941. *Bot. Gaz.* 103, 198.
- OLMO, H. P. 1937. *Cytologia*, F.J.N. 606.
- OLSZEWSKA, M. J. 1954. *Acta Soc. bot. Polon.* 23, 699.
- ONO, H. 1937. *Cytologia*, F.J.N. 535.
- 1941. *Bot. Mag. Tokyo*, 55, 17.
- 1943. *Cytologia*, 13, 61.
- ONO, H. & TATEOKA, T. 1953. *Bot. Mag. Tokyo*, 66, 18.
- ONO, R. 1953. *Jap. J. Genet.* 28, 129.
- ONO, T. 1926. *Sci. Rep. Tôhoku Univ.* 2, 93.
- 1928. *Bot. Mag. Tokyo*, 42, 542.
- 1930. *Bot. Mag. Tokyo*, 44, 168.
- ONO, Y. 1935. *Jap. J. Genet.* 11, 238.
- OSAWA, J. 1913. *J. Coll. Agric. Tokyo*, 1, 264.
- 1920. *Bull. Imp. Agric. Exp. Sta. Tokyo*, 1, 318.
- ÖSTERGREN, G. 1940. *Hereditas*, 26, 305.
- 1942. *Hereditas*, 28, 242.
- 1947. *Hereditas*, 33, 261.
- OWNBEY, G. B. 1951a. *Amer. Midl. Nat.* 45, 184.
- 1951b. *Bull. Torrey bot. Cl.* 78, 233.
- OWNBEY, M. 1950. *Amer. J. Bot.* 37, 487.
- 1953. *Rhodora*, 55, 61.
- PAETOW, W. 1931. *Planta*, 14, 441.
- PAL, B. B., RAMANUJAM, S. & JOSHI, A. B. 1941. *Indian J. Genet.* 1, 28.
- PAL, N. 1952. *Proc. Nat. Inst. Sci. India*, 18, 363.
- PALMGREN, O. 1939. *Bot. Notiser*, 1939, 246.
- 1943. *Bot. Notiser*, 1943, 348.
- PANJE, R. R. 1934. Thesis, Univ. Madras.

- PANNOCCHIA-LAJ, F. 1938. *Nuovo G. bot. Ital.* **45**, 157.
 PANTULU, J. V. 1940. *Curr. Sci.* **9**, 416.
 — 1942. *Curr. Sci.* **11**, 152.
 — 1943. *Curr. Sci.* **12**, 274.
 — 1946. *Curr. Sci.* **15**, 255.
 — 1948. *Proc. 34th Indian Sci. Congr.* pt. 3, 167.
 PANUTINA-MUSCHINA, W. N. 1933. *Bull. Soc. Nat. Moscou, Biol.* **42**, 162.
 PARDI, P. N. 1934. *Nuovo G. Bot. Ital.* **40**, 576.
 PARODI, L. R. 1946. *Gramineas Bonariensis*. Buenos Aires.
 PARTHASARATHY, N. 1938. *Cytologia*, **9**, 307.
 — 1939. *Ann. Bot., Lond.* **3**, 43.
 — 1946. *Curr. Sci.* **15**, 233.
 PASSAMORE, S. F. 1930. *Bot. Gaz.* **90**, 213.
 PASTRANA, M. D. 1932. *Amer. J. Bot.* **19**, 365.
 PATEL, G. I. & OLMO, H. P. 1955. *Amer. J. Bot.* **42**, 141.
 PATHAK, G. N. 1940. *J. Genet.* **39**, 437.
 PATHAK, G. N. SINGH, B., TINARI, K. M., SRIVASTAVA, A. N. & PANDE, K. K. 1949. *Curr. Sci.* **18**, 347.
 PATHAK, G. N. & YADAVA, R. S. 1951. *Curr. Sci.* **20**, 304.
 PATEL, J. S. & NARAYANA, G. V. 1937. *Curr. Sci.* **5**, 479.
 PAUL, A. K. 1937. *Cytologia*, **8**, 48.
 PEARSON, H. H. W. 1912. *Ann. Bot., Lond.* **26**, 603.
 PEARSON, O. H., HOPP, R. & BOHN, G. W. 1951. *Proc. Amer. Soc. hort. Sci.* **57**, 310.
 PERAK, J. T. 1940. *Rev. argent. Agron.* **7**, 364.
 — 1943. *An. Inst. fitotec. S. Catalina*, 1941, **3**, 7.
 PERCIVAL, J. 1926. *J. Genet.* **17**, 49.
 — 1936. *Ann. Bot., Lond.* **50**, 427.
 PEREIRA, A. DE L. 1940. *Bol. Soc. Brot.* **14**, 67.
 — 1942. *Bol. Soc. Brot.* **16**, 5.
 — 1948. *Portug. acta biol. Ser. A*, **2**, 101.
 PERLOVA, R. L. 1939. *C.R. Acad. Sci. U.R.S.S.* **25**, 419.
 *PERRY, B. A. 1943. *Amer. J. Bot.* **30**, 527.
 PETERSON, D. 1936. *Bot. Notiser*, 1936, 281.
 PETO, F. H. 1930. *Canad. J. Res.* **3**, 428.
 — 1933. *J. Genet.* **28**, 113.
 — 1938. *Canad. J. Res.* § C, **16**, 445.
 PEIFFER, H. 1942. *Veröff. dtsch. KolonMus. Bremen*, **3**, 238.
 PHILLIPS, H. M. 1938. *Chron. Bot.* **4**, 385.
 PHILP, J. 1933a. *J. Genet.* **27**, 133.
 — 1933b. *J. Genet.* **28**, 169.
 — 1934a. *J. Genet.* **29**, 197.
 — 1934b. *Daffodil Yearb.* 1934, 52.
 PIENAAR, R. DE V. 1952. *Trans. roy. Soc. S. Afr.* **33**, 223.
 PIERCE, W. P. 1939. *Amer. J. Bot.* **26**, 736.
 PIGOTT, C. D. 1954. *New Phytol.* **53**, 470.
 PIJL, L. VAN DER. 1934. *Rec. Trav. Bot. Neerland*, **31**, 113.
 PINTO-LOPES, J. 1944. *Agron. lusit.* **6**, 129.
 — 1946. *Portug. acta biol. Ser. A*, **1**, 187.
 PIOTROWICZ, M. 1954. *Acta Soc. Bot. Polon.* **23**, 43.
 PIRSCHLE, K. 1942. *Z.i.A.V.* **80**, 247.
 PODDUBNAJA (ARNOLDI), V. 1931. *Beih. bot. Zbl.* § 2, **48**, 141.
 — 1933a. *Planta*, **19**, 46.
 — 1933b. *Planta*, **21**, 381.
 PODDUBNAJA (ARNOLDI), V. & DIANOWA, V. 1934. *Planta*, **23**, 19.
 — 1937. *J. Bot. U.R.S.S.* **22**, 267.
 PODDUBNAJA (ARNOLDI), V., STESCHINA, N. & SOSNOVETZ, A. 1935. *Beih. bot. Zbl. Ser. A*, **53**, 309.
 PODDUBNAJA, W. 1927. *Planta*, **4**, 284.

- RANGASWAMY, K. 1949. *Proc. 36th Indian Sci. Congr.* pt. 3, 137.
- RANGASWAMY-AYYANGAR, G. N. See AYYANGAR.
- RAO, C. V. & RAO, K. V. S. 1952. *J. Indian bot. Soc.* 31, 56.
- RAO, K. V. R. 1940. *J. Indian bot. Soc.* 19, 53.
- RAO, L. N. 1942. *Ann. Bot., Lond.* n.s. 6, 131.
- RAO, N. S. 1947a. *Curr. Sci.* 16, 156.
- 1947b. *Curr. Sci.* 16, 229.
- RAO, N. S. & DATTA, R. M. 1953. *Nature, Lond.* 171, 754.
- RAO, V. S. 1936a. *J. Indian bot. Soc.* 15, 105.
- 1936b. *J. Indian bot. Soc.* 15, 335.
- RAO, Y. S. 1943. *Indian J. Genet.* 3, 64.
- 1945. *J. Indian bot. Soc.* 24, 42.
- 1946. *Curr. Sci.* 15, 78.
- 1950a. *Curr. Sci.* 19, 384.
- 1950b. *Proc. 37th Indian Sci. Congr.* pt. 3, 67.
- 1953a. *Sci. & Cult.* 18, 336.
- 1953b. *Proc. Nat. Inst. Sci. India*, 19, 563.
- RATERA, E. L. 1938. *Rep. Inst. Genet. B. Aires*, 1, 88.
- 1943. *Rev. Fac. Agron. B. Aires*, 10, 318.
- 1947. *Bol. Soc. argent. Bot.* 2, 43.
- RATTENBURY, J. A. 1948. *Madroño*, 9, 258.
- RAU, M. A. 1941. *Beih. bot. Zbl.* 61A, 1.
- *RAU, N. S. 1929a. *J. Indian bot. Soc.* 8, 126.
- *— 1929b. *J. Indian bot. Soc.* 8, 201.
- RAUCH, K. V. 1936. *Ber. schweiz. bot. Ges.* 46, 61.
- RAVES, J. F. 1926. *J. R. micr. Soc.* 46, 193.
- RAY, C. 1944. *Amer. J. Bot.* 31, 241.
- RAY, P. M. 1954. *Rapp. & Comm. 8th Int. Bot. Congr.* § 10, 188.
- RAYNOR, L. A. 1952. *Amer. J. Bot.* 39, 713.
- REDDY, N. S. 1952. *J. Hered.* 43, 233.
- REED, H. S. 1950. *Madroño*, 10, 139.
- REESE, G. 1950. *Planta*, 38, 324.
- 1952a. *Ber. dtsh. bot. Ges.* 64, 241.
- 1953. *Ber. dtsh. bot. Ges.* 66, 66.
- 1954. *Planta*, 44, 203.
- REGNART, H. C. 1935. *Genetica*, 17, 145.
- REMSKI, M. F. 1954. *Bot. Gaz.* 116, 163.
- RESENDE, F. 1937. *Planta*, 26, 757.
- 1938. *Ber. dtsh. bot. Ges.* 56, 533.
- 1940. *Chromosoma*, 1, 486.
- RESENDE, F. & FRANCA, P. DA. 1946. *Portug. acta biol.* 1, 289.
- RESENDE, F. & RIJO, L. 1948. *Portug. acta biol.* 2, 117.
- RHOADES, M. M. 1950. *J. Hered.* 41, 58.
- RICHARDS, P. W. & CLAPHAM, A. R. 1941. *J. Ecol.* 29, 385.
- RICHARDSON, M. M. 1933. *Univ. Calif. Publ. Bot.* 17, 51.
- 1935. *Bot. Gaz.* 97, 400.
- RICHHARIA, R. H. 1937. *J. Genet.* 34, 45.
- RICHHARIA, R. H. & GHOSH, P. N. 1953. *Curr. Sci.* 22, 17.
- RICHHARIA, R. H. & KALAMAR, W. J. 1938. *Cytologia*, 9, 249.
- RICHHARIA, R. H. & KOTWAL, J. P. 1940. *Indian J. agric. Sci.* 10, 1033.
- RICHHARIA, R. H. & PERSAI, D. P. 1940. *Curr. Sci.* 9, 542.
- RICK, C. M. 1945. *Genetics*, 30, 347.
- 1951. *P.N.A.S.* 37, 741.
- 1953. *Proc. Amer. Soc. hort. Sci.* 61, 459.
- RILEY, H. P. 1948a. *J. S. Afr. Bot.* 14, 97.
- 1948b. *Amer. J. Bot.* 35, 645.
- 1950. *Trans. Ky. Acad. Sci.* 13, 111.
- RISSE, K. 1928. *Bot. Arch.* 23, 266.
- RIZET, G. 1945. *C.R. Soc. Biol., Paris*, 139, 140.

- RODOLICO, A. 1933. *Nuovo G. bot. ital.* 40, 421.
- RODRIGUES, J. E. DE M. 1950. *Mem. Soc. Brot.* 6, 113.
- 1953. Diss. Univ. Coimbra.
- ROHWEDER, H. 1934. *Engler's bot. Jb.* 66, 249.
- *— 1937. *Planta*, 27, 500.
- 1939. *Belh. bot. Zbl* § B, 59, 1
- ROLLINS, R. C. 1939a. *Amer. J. Bot.* 26, 419.
- 1939b. *Lloydia*, 2, 109.
- 1953. *Rhodora*, 55, 109.
- ROMANENKO, V. 1937. *J. Bot. Acad. Sci. Ukr.* 11, 3.
- ROMANOV, I. D. 1936. *Planta*, 25, 438.
- RORK, C. L. 1949. *Amer. J. Bot.* 36, 687.
- ROSCOE, M. V. 1927. *Bot. Gaz.* 84, 392.
- ROSEN, W. 1931. *Acta Hort. gothoburg.* 7, 31.
- ROSENTHAL, C. 1936. *Jb. wiss. Bot.* 83, 809.
- ROSS, J. G. & DUNCAN, R. E. 1949. *Bull. Torrey bot. Cl.* 76, 414.
- ROY, B. 1933. *Indian J. agric. Sci.* 3, 1098.
- 1936. *Cytologia*, 7, 424.
- 1937. *J. Genet.* 35, 89.
- ROZANOVA, M. A. 1939. *C.R. Acad. Sci., U.R.S.S.* 24, 58.
- 1940a. *C.R. Acad. Sci., U.R.S.S.* 29, 143.
- 1940b. *Zh. Bot. U.S.S.R.* 25, 304.
- RÜMKE, C. L. 1934. *Arch. Suikerind. Ned.-Ind.* 1934, 211.
- RUNQUIST, E. 1937. *Hereditas*, 23, 279.
- RUTISHAUSER, A. 1943. *Ber. schweiz. bot. Ges.* 53, 5.
- *RUTLAND, J. P. 1941. *New Phytol.* 40, 210.
- RUTTLE, M. L. 1931a. *Gartenbauwiss.* 4, 428.
- 1931b. *Tech. Bull. N.Y. St. agric. Exp. Sta.* 186, 1.
- 1932. *Gartenbauwiss.* 7, 154.
- RYBERG, M. 1950. *Acta Hort. berg.* 15, 207.
- RYBIN, V. A. 1926. *Bull. appl. Bot., Pl.-Breed.* 16, 187.
- 1927. *Bull. appl. Bot., Pl.-Breed.* 17, 101.
- 1930. *Z.i.A.V.* 53, 313.
- 1933. *Bull. appl. Bot., Pl.-Breed.* S. 2, 2, 3.
- 1936. *Planta*, 25, 22.
- 1939. *C.R. Acad. Sci., U.R.S.S.* 24, 368, 483.
- RYKA, C. 1954. *Acta Soc. bot. Polon.* 23, 321.
- SACHS, L. 1953a. *Heredity*, 7, 49.
- 1953b. *J. agric. Sci.* 43, 204.
- SAEZ, F. A. 1949a. *Lilloa*, 19, 97.
- 1949b. *Lilloa*, 19, 105.
- SAEZ, F. A. & NUNEZ, O. 1943. *Notas. Mus. La Plata*, 8, 333.
- SAKAI, B. 1951. *La Kromosomo*, 11, 425.
- 1952. *Cytologia*, 17, 104.
- SAKAI, K. 1934. *Jap. J. Genet.* 9, 226.
- 1935. *Jap. J. Genet.* 11, 68.
- 1940. *Jap. J. Bot.* 11, 68.
- SALOMON, E. S. 1940. *An. Inst. fitotec. S. Catalina*, 2, 13, 1940 (1942).
- SAMPATH, S. & RAMANATHAN, K. 1949. *Curr. Sci.* 18, 408.
- SAMUELSSON, G. 1914. *Svensk bot. Tidskr.* 8, 181.
- SANDO, W. J. 1939. *J. Hered.* 30, 271.
- SANSOME, E. R. 1933. *Cytologia*, 5, 15.
- SANSOME, E. R. & LA COUR, L. 1934. *Lily Yearb.* 40.
- SANTOS, A. C. DOS. 1945. *Bol. Soc. Brot.* 19, 519.
- SANTOS, J. K. 1924. *Bot. Gaz.* 77, 353.
- SASAKI, M. 1937. *Jap. J. Genet.* 13, 260.
- SATCZEK, K. 1951. *Bull. Acad. Polon. Sci. Lett. Ser. B* (1951), 285.
- SATINA, S. 1953. *Amer. J. Bot.* 40, 638.

- SATINA, S., BERGNER, A. D. & BLAKESLEE, A. F. 1941. *Amer. J. Bot.* **28**, 383.
- SATO, D. 1935a. *Bot. Mag. Tokyo*, **49**, 298.
- 1935b. *Jap. J. Genet.* **11**, 272.
- 1936. *Cytologia*, **7**, 521.
- 1938. *Cytologia*, **9**, 203.
- 1942. *Jap. J. Bot.* **12**, 57.
- 1946. *Cytologia*, **14**, 174.
- 1948. *Jap. J. Genet.* **23**, 44.
- 1952. *Pap. Coord. Comm. Res. Genet.* **3**, 91.
- SATO, M. 1932. *Bot. Mag. Tokyo*, **46**, 68.
- 1934. *Bot. Mag. Tokyo*, **48**, 823.
- SAURA, F. 1941. *Rep. Inst. Genet. B. Aires*, **2**, 41.
- 1943. *Rev. Fac. Agron. B. Aires*, **10**, 344.
- 1944. *Ingen. Agron.* **6**, 188.
- 1947. *Rev. Fac. Agron. B. Aires*, **11**, 330.
- 1948a. *Rev. Fac. Agron. B. Aires*, **12**, 51.
- 1948b. *Clenc. Invest.* 1948, 435.
- SAVCHENKO, P. F. 1935. *Bull. appl. Bot. Select.* **II**, **8**, 105.
- SAX, H. J. 1930. *J. Arnold Arbor.* **11**, 220.
- 1954. *J. Arnold Arbor.* **35**, 334.
- SAX, H. J. & SAX, K. 1947. *J. Arnold Arbor.* **28**, 137.
- SAX, K. 1929. *Proc. Amer. Soc. hort. Sci.* **26**, 32.
- 1930a. *J. Arnold Arbor.* **11**, 7.
- 1931a. *J. Arnold Arbor.* **12**, 3.
- 1931b. *J. Arnold Arbor.* **12**, 198.
- 1932. *J. Arnold Arbor.* **13**, 363.
- 1933a. *J. Arnold Arbor.* **14**, 82.
- 1933b. *J. Arnold Arbor.* **14**, 274.
- 1936. *J. Arnold Arbor.* **17**, 352.
- SAX, K. & ABBE, E. C. 1932. *J. Arnold Arbor.* **13**, 37.
- SAX, K. & BEAL, J. M. 1934. *J. Arnold Arbor.* **15**, 225.
- SAX, K. & HUSTED, L. 1936. *Amer. J. Bot.* **23**, 606.
- SAX, K. & KRIBS, D. A. 1930. *J. Arnold Arbor.* **11**, 147.
- SAX, K. & SAX, H. J. 1933. *J. Arnold Arbor.* **14**, 356.
- SAXTON, W. T. 1909. *Bot. Gaz.* **47**, 406.
- SCHAEPPPI, H. & STEINDL, F. 1937. *Ber. schweiz. bot. Ges.* **47**, 369.
- SCHAFER, B. & LA COUR, L. 1934. *Ann. Bot., Lond.* **48**, 693.
- SHEEL, M. 1931. *Bot. Arch.* **32**, 148.
- SCHEEERER, H. 1939. *Planta*, **29**, 636.
- 1940. *Planta*, **30**, 716.
- SCHIEHMANN, E. 1929. *Ber. dtsch. bot. Ges.* **47**, 164.
- 1951. *Z. Pflanzenzücht.* **30**, 464.
- SCHLENKER, G. 1936. *Flora*, **130**, 305.
- SCHLOSSER, L. A. 1936. *Züchter*, **8**, 75.
- SCHNACK, B. 1940. *An. Inst. fitotec. S. Catalina*, **2**, **9**, 1940 (1942).
- 1944. *An. Inst. fitotech. S. Catalina*, **4**, 17.
- SCHNACK, B. & COVAS, G. 1944. *Darwiniana*, **6**, 469.
- 1945a. *Rev. argent. Agron.* **12**, 222.
- 1945b. *Darwiniana*, **7**, 71.
- 1947. *Haumania*, **1**, 32.
- SCHNACK, B. & FERNANDEZ, O. 1946. *Bol. Soc. argent. Bot.* **1**, 285.
- SCHNACK, B. & GONZALEZ, F. F. 1945. *Rev. argent. Agron.* **12**, 285.
- SCHNARF, K. & WUNDERLICH, R. 1939. *Flora*, **33**, 297.
- SCHOENNAGEL, E. 1931. *Bot. Jahrb.* **64**, 266.
- SCHOTSMA, H. D. 1954. *Acta bot. Neerl.* **3**, 313.
- SCHTSCHAVINSKAJA, S. A. 1937a. *Bull. appl. Bot., Pl.-Breed.* **7**, 69.
- 1937b. *Bull. appl. Bot., Pl.-Breed.* **7**, 101.
- SCHULLE, H. 1933. *Flora*, **127**, 140.
- SCHULZ-GAEBEL, H. 1930. *Beitr. Biol. Pfl.* **18**, 345.

- SCHÜRHOFF, P. N. 1926. Die Zytologie der Blütenpflanzen. Stuttgart.
- 1929a. *Beitr. Biol. Pfl.* 17, 72.
- 1929b. *Arch. Pharm. Berl.* 267, 515.
- 1931. *Engler's bot. Jahrb.* 64, 324.
- SCHÜRHOFF, P. N. & MÜLLER, H. 1937. *Cytologia, F.J.N.* 551.
- SCHWARZENBACH, F. 1922. *Flora*, 115, 393.
- SCHWEMMLE, J. 1924. *Ber. dtsch. bot. Ges.* 42, 238.
- SEALY, J. R. & WEBB, D. A. 1950. *J. Ecol.* 38, 223.
- SEARS, E. R. 1948. *Adv. Genet.* 2, 239.
- SEKI, H. 1950. *Jap. J. Genet.* 25, 123.
- SENJANINOVA (KORCZAGINA), M. 1930. *Bull. appl. Bot., Pl.-Breed.* 26, 453.
- 1932a, b. *Bull. appl. Bot., Pl.-Breed.* 28, 1, 91.
- *SENN, H. A. 1938. *Bibl. Genet.* 12, 175.
- SENN, H. A., BOWDEN, W. M. & MOORE, R. J. 1949. *Lilloa*, 19, 119.
- SEPELEVA, E. M. 1937. *C.R. Acad. Sci. U.R.S.S.* 15, 207.
- 1939. *C.R. Acad. Sci. U.R.S.S.* 25, 228.
- SESHAGIRIAH, K. N. 1941. *J. Indian bot. Soc.* 20, 357.
- SETHI, M. L. 1928. *J. Indian bot. Soc.* 7, 105.
- 1930. *J. Indian bot. Soc.* 9, 126.
- SHAH, G. L. 1953. *Curr. Sci.* 22, 50.
- SHALYGIN, I. N. 1941. *C.R. Acad. Sci. U.R.S.S.* 30, 527.
- SHARMA, A. K. 1955. *Genetica*, 27, 323.
- SHARMA, A. K. & DAS, N. K. 1954. *Agron. lusitan.* 16, 23.
- SHARMA, A. K. & GHOSH, C. 1954. *Genetica*, 27, 17.
- SHARMA, Y. M. L. 1939. *Ann. Bot., Lond. n.s.* 3, 861.
- SHCHIBRA, N. 1936. *C.R. Acad. Sci. U.R.S.S.* 11, 189.
- SHERIFF, A. 1946. *Curr. Sci.* 15, 354.
- SHERIFF, A. & MURTHY, M. H. S. 1946. *Curr. Sci.* 15, 319.
- SHIBUKAWA, T. 1930. *Bot. Mag. Tokyo*, 44, 561.
- SHIFFRIS, O. 1941. *Thesis Cornell Univ.* 1941, 363.
- 1942. *J. Hered.* 33, 144.
- SHIMAMURA, T. 1941. *Bot. Mag. Tokyo*, 55, 553.
- 1951. *Jap. J. Genet.* 26, 226.
- SHIMOTOMAI, N. 1925. *Bot. Mag. Tokyo*, 39, 159.
- 1929. *Sci. Rep. Tôhoku Univ. Ser. 4*, 4, 369.
- 1933. *J. Sci. Hiroshima Univ. Ser. B*, 2, 2, 1.
- 1937b. *Zi.A.V.* 74, 30.
- SHIMOTOMAI, N. & HARA, K. 1935. *Bot. & Zool., Tokyo*, 3, 1759.
- SHIMOTOMAI, N. & HUZIWARA, Y. 1942. *Cytologia*, 12, 206.
- SHIMOTOMAI, N. & INOUE, S. 1951. *J. Sci. Hiroshima Univ. Ser. B*, 2, 6, 1.
- SHIMOTOMAI, N. & TAKEMOTO, T. 1936. *Bot. Mag. Tokyo*, 50, 324.
- SHINKE, N. 1929. *Mem. Coll. Sci. Kyoto, Ser. B*, 9, 367.
- SHOWALTER, H. M. 1935. *Amer. J. Bot.* 22, 594.
- SIDOROV, B. N. & SOKOLOV, N. N. 1941. *C.R. Acad. Sci. U.R.S.S.* 31, 264.
- SIKKA, S. M. 1940. *J. Genet.* 40, 441.
- SIMMONDS, N. W. 1953. *Kew Bull.* 1953, 571.
- 1954. *Heredity*, 8, 139.
- SIMMONDS, N. W. & DODDS, K. S. 1949. *J. Genet.* 49, 221.
- SIMON, S. V. & LOWIG, E. 1930. *Jb. wiss. Bot.* 72, 466.
- SIMONET, M. 1932c. *C.R. Acad. Sci., Paris*, 195, 738.
- 1934a. *Ann. Sci. nat. Bot. s. 10*, 16, 229.
- 1934c. *Bull. Soc. bot. Fr.* 81, 273, 801.
- 1934d. *C.R. Soc. Biol., Paris*, 117, 1153.
- 1935. *C.R. Acad. Sci., Paris*, 201, 1210.
- 1938. *C.R. Acad. Agric. Fr.* 24, 846.
- 1952. *C.R. Acad. Sci., Paris*, 235, 1244.
- 1954. *C.R. Acad. Sci., Paris*, 237, 1755.
- SIMONET, M. & MIEDZYRZECKI, CH. 1932. *C.R. Soc. Biol., Paris*, 111, 969.
- SIMURA, T. 1935. *Proc. Crop. Sci. Soc. Japan*, 7, 121.

- SINGH, B. 1951. *Curr. Sci.* **20**, 105.
- SINGH, T. S. N. 1934. *Indian J. agric. Sci.* **4**, 290.
- SINHA, N. P. 1950a. *Indian J. Genet.* **10**, 36.
- 1950b. *Curr. Sci.* **19**, 348.
- 1951a. *J. Indian bot. Soc.* **30**, 92.
- 1951b. *Curr. Sci.* **20**, 70.
- SINNOTT, E. W., BLAKESLEE, A. F. & WARMKE, H. E. 1939. *Genetics*, **24**, 84.
- SINOTO, Y. 1928b. *Proc. Imp. Acad. Japan*, **4**, 231.
- 1929. *Cytologia*, **1**, 109.
- 1938. *Cytologia*, **9**, 254.
- SINOTO, Y. & KIKKAWA, R. 1932. *Jap. J. Genet.* **7**, 194.
- SINOTO, Y. & SATO, D. 1940. *Sci. genet.* **1**, 354.
- SIROTINA, M. 1936. *Nautsch. Sapisk. Sacharn. promytlenosti*, **2**, 56.
- *SISA, M. 1929. *Jap. J. Genet.* **5**, 88.
- SKALINSKA, M. 1931. *Proc. 5th Int. Bot. Congr.* **250**,
- 1947. *J. Linn. Soc. (Bot.)*, **53**, 159.
- 1950a. *Acta Soc. Bot. Polon.* **20**, 45.
- 1950b. *Bull. Acad. Pol. Sci. Lett. Ser. B*, **1**, 149.
- 1951. *Bull. Acad. Pol. Sci. Lett. Ser. B*, **1**, 119.
- SKOVSTED, A. 1933. *Ann. Bot., Lond.* **47**, 227.
- 1934a. *J. Genet.* **28**, 407.
- 1934b. *Dansk bot. Ark.* **8**, 1.
- 1935. *J. Genet.* **31**, 263.
- *—— 1941. *C.R. Lab. Carls. S. Physiol.* **23**, 195.
- SLADE, B. F. 1953. *Trans. roy. Soc. N.Z.* **81**, 1.
- SMITH, B. W. 1937. *Bull. Torrey bot. Cl.* **64**, 189.
- SMITH, C. M. 1929. *Bot. Gaz.* **87**, 507.
- SMITH, E. C. 1941. *J. Arnold Arbor.* **22**, 219.
- 1943. *J. Arnold Arbor.* **24**, 275.
- SMITH, F. H. 1933. *P.N.A.S.* **19**, 605.
- 1934. *Proc. Amer. phil. Soc.* **74**, 193.
- 1938. *Amer. J. Bot.* **25**, 220.
- 1942. *Amer. J. Bot.* **29**, 657.
- 1955. *Amer. J. Bot.* **42**, 213.
- SMITH, H. B. 1927. *Genetics*, **12**, 84.
- SMITH, L. 1946. *J. agric. Res.* **73**, 291.
- SMITH, S. G. 1932. *Bot. Gaz.* **94**, 394.
- SMITH-WHITE, S. 1942. *Proc. Linn. Soc. N.S.W.* **67**, 335.
- 1948a. *Proc. Linn. Soc. N.S.W.* **73**, 16.
- 1948b. *Proc. Linn. Soc. N.S.W.* **73**, 37.
- 1950. *Proc. Linn. Soc. N.S.W.* **75**, 99.
- 1954a. *Proc. Linn. Soc. N.S.W.* **79**, 21.
- 1954b. *Aust. J. Bot.* **2**, 287.
- 1955. *Aust. J. Bot.* **3**, 48.
- SNOAD, B. 1951. *Heredity*, **5**, 279.
- 1952. *Rep. John Innes Hort. Instn.* **42**, 47.
- 1955. *Heredity*, **9**, 129.
- SNYDER, L. A. & HARLAN, J. R. 1953. *Amer. J. Bot.* **40**, 702.
- SOBOLEWSKA, H. 1926. *Acta Soc. Bot. Polon.* **4**, 64.
- SÖDERBERG, E. 1919. *Svensk bot. Tidskr.* **13**, 204.
- SOEDA, T. 1944. *J. Fac. Sci. Hokkaido Univ.* **5**, 221.
- SOKOLOVSKAJA, A. 1932. *Trud. petergof. est-nauch. Inst.* **8**, 149.
- 1938. *Cytologia*, **8**, 452.
- *SOKOLOVSKAJA, A. & STRELKOVA, O. 1938. *C.R. Acad. Sci. U.R.S.S.* **21**, 68.
- ——— 1940. *C.R. Acad. Sci. U.R.S.S.* **29**, 415.
- ——— 1941. *C.R. Acad. Sci. U.R.S.S.* **32**, 144.
- SÖLLNER, R. 1950. *Experientia*, **6**, 335.
- 1952. *Experientia*, **8**, 104.
- 1953. *C.R. Acad. Sci. Paris*, **236**, 1503.

- SÖRENSÉN, T. & GUDJONSSON, G. 1946. *K. danske vidensk. Selsk. Skr. (Biol.)*, 4 (2), 1.
- SPARROW, A. H., POND, V. & SPARROW, R. C. 1952. *Amer. Nat.* 86, 277.
- SPEESE, B. M. 1939. *Amer. J. Bot.* 26, 853.
- SPEESE, B. M. & BALDWIN, J. T. 1952. *Amer. J. Bot.* 39, 685.
- SPIER, J. D. 1934. *Canad. J. Res.* 11, 347.
- SPRUMONT, G. 1928. *Cellule*, 38, 271.
- SRINATH, K. V. 1940. *Cytologia*, 10, 467.
- SRINIVASAN, A. R. 1941. *Proc. Indian Acad. Sci. § B*, 14, 529.
- 1942. *Proc. Indian Acad. Sci. § B*, 16, 155.
- SRINIVASAN, V. K. 1952. *Curr. Sci.* 21, 224.
- SRINIVASACHAR, D. 1940. *Proc. Indian Acad. Sci. § B*, 11, 107.
- SRIVASTAVA, G. D. 1939. *Proc. Nat. Acad. Sci. India*, 9, 58.
- STÄHLIN, A. 1929. *Pflanzenbau*, 1, 330.
- STANTON, T. R. 1936. *Yearb. Agric. U.S. Dept. Agric.* 1936, 375.
- STEBBINS, G. L. 1932. *Bot. Gaz.* 94, 134, 322.
- 1938. *Genetics*, 23, 83.
- 1948. *Science*, 108, 5.
- STEBBINS, G. L., JENKINS, J. A. & WALTERS, M. S. 1953. *Univ. Calif. Publ. Bot.* 26, 401.
- STEBBINS, G. L. & KODANI, M. 1944. *J. Hered.* 35, 163.
- STEBBINS, G. L. & LOVE, R. M. 1941. *Amer. J. Bot.* 28, 371.
- STEBBINS, G. L. & PADDOCK, E. P. 1949. *Madroño*, 10, 70.
- STEBBINS, G. L. & PUN, F. T. 1953. *Amer. J. Bot.* 40, 444.
- STEBBINS, G. L. & TOBGY, H. A. 1944. *Amer. J. Bot.* 31, 1.
- STEBBINS, G. L., TOBGY, H. A. & HARLAN, J. R. 1944. *Proc. Calif. Acad. Sci.* 25, 307.
- STEBBINS, G. L., VALENCIA, J. I. & VALENCIA, R. M. 1946. *Amer. J. Bot.* 33, 338.
- STEBBINS, G. L. & WALTERS, M. S. 1949. *Portug. Acta Biol. Ser. A*, R. B. Goldschmidt vol., 106.
- STEINDL, FR. 1935. *Ber. schweiz. bot. Ges.* 44, 343.
- STEINER, E. 1944. *Bot. Gaz.* 105, 374.
- STENAR, H. 1927. *Bot. Notiser*, 1927, 104.
- 1928. *Bot. Notiser*, 1928, 357.
- 1935. *Ark. Bot.* 26 (8).
- STEPHENS, S. G. 1942. *J. Genet.* 44, 272.
- STERN, F. C. 1944. *Proc. Linn. Soc. London, Bot.* 155, 76.
- STEWART, R. N. 1943. *Bot. Gaz.* 104, 620.
- 1947. *Amer. J. Bot.* 34, 19.
- STEWART, R. N. & BAMFORD, R. 1942. *Amer. J. Bot.* 29, 301.
- STEWART, W. S. 1939. *Amer. J. Bot.* 26, 730.
- STIFF, M. L. 1951. *Virginia J. Sci.* 2, 317.
- STOCKAR, A. 1946. *Rev. argent. Agron.* 13, 253.
- STOCKWELL, P. 1935. *Bot. Gaz.* 96, 565.
- STOKES, J. 1937. *Bot. Gaz.* 99, 387.
- STOLZE, K. V. 1925. *Bibl. genet. Lpz.* 8, 71.
- STOREY, W. B. 1941. *Hawaii Agric. Exp. Sta. Bull.* 87, 6.
- 1950. *Pacific Science*, 4, 37.
- 1953. *Bull. Pacif. Orchid Soc. Hawaii*, 11, 17.
- STOUT, A. B. 1932. *Cytologia*, 3, 250.
- STRASBURGER, E. 1909. *Z. Bot.* 1, 507.
- 1910. *Flora*, 100, 398.
- STRAUB, J. 1937. *Ber. dtsh. bot. Ges.* 55, (160).
- 1938. *Ber. dtsh. bot. Ges.* 56, 406.
- 1939. *Ber. dtsh. bot. Ges.* 57, 531.
- STRELKOVA, O. 1938. *Cytologia*, 8, 468.
- STREY, M. 1931. *Planta*, 14, 682.
- SUBRAMANYAM, K. 1944. *Proc. Indian Acad. Sci. § B*, 19, 115.
- 1946. *J. Mysore Univ. Ser. B*, 7, 1.
- 1951. *Proc. 38th Indian Sci. Congr.* pt. 3, 145.
- STUCKEY, I. H. & BANFIELD, W. G. 1946. *Amer. J. Bot.* 33, 185.
- SUESSENGUTH, K. 1920. *Beih. bot. Zbl.* 38 (2), 1.

- SUESSENGUTH, K. 1921. *Flora*, 114, 313.
- SUOIHARA, Y. 1940. *Sci. Rep. Tōhoku Univ.* 15, 13.
- 1941. *Sci. Rep. Tōhoku Univ.* 16, 187.
- 1943. *Sci. Rep. Tōhoku Univ.* 17, 125.
- SUGIURA, T. 1927. *Bot. Mag. Tokyo*, 41, 219.
- 1928a. *Bot. Mag. Tokyo*, 42, 504.
- 1931. *Bot. Mag. Tokyo*, 45, 353.
- 1936a. *Proc. imp. Acad. Japan*, 12, 144.
- 1936b. *Cytologia*, 7, 544.
- 1937a. *Cytologia*, F.J.N. 845.
- 1937b. *Bot. Mag. Tokyo*, 51, 425.
- *— 1939a. *Proc. imp. Acad. Japan*, 14, 391.
- *— 1940, including 1939. *Cytologia*, 10, 73, 205, 324, 363, 558.
- 1942. *Cytologia*, 12, 418.
- 1944. *Cytologia*, 13, 352.
- SULLIVAN, T. D. 1947. *Bull. Torrey bot. Cl.* 74, 453.
- SUOMALAINEN, E. 1947. *Ann. Acad. Sci. Fenn. Ser. A*, 13, 1.
- SUTO, T. 1936. *Jap. J. Genet.* 12, 107.
- 1944. *J. Fac. Sci. Hokkaido Univ. Ser. 5*, 5, 249.
- SUTTON, E. 1935. *Ann. Bot., Lond.* 49, 689.
- SUZUKA, O. 1950a. *Rep. Kihara Inst. Biol. Res.* 4, 57.
- 1950b. *Jap. J. Genet.* 25, 17.
- 1951. *Jap. J. Genet.* 26, 226.
- SUZUKA, O. & KORIBA, S. 1949. *Jap. J. Pharmacog.* 3, 68.
- SVENSSON, H. G. 1925. *Uppsala Univ. Arsskr.* no. 2, 1925.
- SVESHNIKOVA, I. N. 1927. *Bull. appl. Bot., Pl.-Breed.* 17, 37.
- 1930. *Proc. U.S.S.R. Congr. Genet.* 2, 441.
- 1940. *J. Hered.* 31, 349.
- SWAMINATHAN, M. S. 1954. *Genetics*, 39, 59.
- SWAMINATHAN, M. S. & HOUGAS, R. W. 1954. *Amer. J. Bot.* 41, 645.
- SWAMY, B. G. L. 1941. *Proc. Indian Acad. Sci.* § B, 14, 454.
- SYMON, J. L. 1926. *Bot. Gaz.* 81, 121.
- SZELUBSKY, R. 1950. *Palest. J. Bot. Jerusalem*, 5, 1.
- SZWABOWICZ, A. 1954. *Acta Soc. bot. Polon.* 23, 243.
- TÄCKHOLM, G. 1914. *Svensk bot. Tidskr.* 8, 223.
- 1922. *Acta Hort. berg.* 7, no. 3.
- TÄCKHOLM, G. & SÖDERBERG, E. 1917. *Ark. Bot.* 15, no. 8.
- 1918. *Svensk bot. Tidskr.* 12, 189.
- TAHARA, M. 1910. *Bot. Mag. Tokyo*, 24, 281.
- 1921. *J. Coll. Sci. Tokyo*, 43 (7).
- 1937. *Cytologia*, F.J.N. 14.
- TAHARA, M. & SHIMOTOMAI, N. 1916. *Bot. Mag. Tokyo*, 40, 132.
- TAKAGI, F. 1928. *Sci. Rep. Tōhoku Univ. Ser. 4*, 3, 665.
- 1933. *Bot. Mag. Tokyo*, 47, 556.
- TAKAGI, N. 1938. *Bull. Miyazaki Coll. Agric. For.* 10, 83.
- TAKENAKA, V. 1931. *J. Tyosen. nat. Hist. Soc.* 12, 1.
- TAKENAKA, Y. 1941. *Bot. Mag. Tokyo*, 55, 319.
- 1950. *Cytologia*, 16, 95.
- 1952. *Pap. Coordin. Commit. Res. Genet.* 3, 71.
- TAKIZAWA, S. 1940. *Jap. J. Genet.* 16, 18.
- 1952a. *J. Fac. Sci. Hokkaido Univ. Ser. 5*, 6, 249.
- 1952b. *Kromosomo*, 14, 509.
- TAMAMSCHIAN, S. 1933. *Bull. appl. Bot. Ser. 2*, 2, 137.
- TANAKA, N. 1935. *Bot. Mag. Tokyo*, 49, 709.
- 1937. *Cytologia*, F.J.N. 814.
- 1938. *Cytologia*, 8, 515.
- 1939a. *Bot. Mag. Tokyo*, 53, 480.

- TANAKA, N. 1939b. *Cytologia*, 10, 51.
 — 1939c. *Jap. J. Genet.* 15, 153.
 — 1941. *Bot. Mag. Tokyo*, 55, 55.
 — 1949. *Cytologia*, 15, 15.
 TANG, P. S. & LOO, W. S. 1940. *Science*, 91, 222.
 TANZI, SH. 1925. *Bot. Mag. Tokyo*, 39, 459.
 TARNAVSCHI, I. T. 1935. *Bull. Fac. St. Cernauti*, 9, 47.
 — 1938. *Bull. Fac. St. Cernauti*, 12, 68.
 TATEOKA, T. 1954. *Cytologia*, 19, 317.
 *TAYLOR, H. 1945. *Brittonia*, 5, 337.
 TAYLOR, W. R. 1920. *Contr. bot. Lab. Univ. Pa.* 5, 111.
 — 1925a. *Amer. J. Bot.* 12, 104.
 — 1925b. *Amer. J. Bot.* 12, 219.
 — 1925c. *Amer. J. Bot.* 12, 238.
 TERNOVSKY, M. F. 1935. *Z. Zücht. A.* 20, 268.
 TESHIMA, T. 1933. *J. Fac. Agric. Hokkaido Univ.* 34, 155.
 TETRY, A. 1941. *Rev. Sci.* 79, 190.
 THATHACHAR, T. 1942. *J. Indian bot. Soc.* 21, 185.
 THERMAN, E. 1950. *Amer. J. Bot.* 37, 407.
 — 1951. *Heredity*, 5, 253.
 — 1953. *Ann. Bot. Soc. Vanamo*, 25 (6), 1.
 THOMAS, P. T. 1936. *Nature*, 138, 402.
 — 1940. *J. Genet.* 40, 141.
 THOMAS, P. T. & REVELL, S. H. 1946. *Ann. Bot., Lond.* 10, 159.
 THOMPSON, H. J. 1953. *Contr. Dudley Herb. Calif.* 4, 73.
 THOMPSON, R. C., WHITAKER, T. W. & KOSAR, W. F. 1941. *J. agric. Res.* 63, 91.
 TIMM, F. W. & CLAPHAM, A. R. 1940. *New Phytol.* 39, 1.
 TING, Y. C. & KEHR, A. E. 1953. *J. Hered.* 44, 207.
 *TISCHLER, G. 1922. *Allg. Pflanzenkaryologie, Hb. Pflanzenanat.* 2, Berlin.
 *— 1927a. *Tabul. biol., Hague*, 4, 1.
 — 1927b. *Planta*, 4, 617.
 — 1928. *Biol. Zbl.* 48, 321.
 — 1929. *Planta*, 8, 685.
 — 1930. *Z. Bot.* 23, 150.
 *— 1931. *Tabul. biol., Hague*, 7, 109.
 — 1931b. *Ber. dtsch. bot. Ges.* 47, (30).
 *— 1936 & 1937. *Tabul. biol., Hague*, 11, 281 and 12, 57.
 *— 1938. *Tabul. biol., Hague*, 16, 162.
 — 1942. *Naturwiss.* 30, 713.
 *— 1950. *Chromosomenzahlen der Gefäßpflanzen Mitteleuropas.* Hague.
 TIXIER, P. 1953. *Rev. Cytol., Paris*, 14, 1.
 TJEBBES, K. 1928. *Hereditas*, 10, 328.
 TJIO, J. H. 1948. *Hereditas*, 34, 135.
 TOMÉ, G. A. 1947. *Rev. Fac. Agron. B. Aires*, 11, 299.
 TONGIORGI, E. 1935. *Nuovo G. bot. ital.* 42, 261.
 — 1942. *Nuovo G. bot. ital.* 49, 242.
 TÖREN, J. 1950. *Rev. Fac. Sci. Univ. Istanbul, Ser. B.* 15, 239.
 TOXOPEUS, H. J. 1933. *Genetica*, 15, 241.
 — 1952. *Euphytica*, 1, 175.
 TRAUB, H. P. 1942. *Herbertia*, 9, 53.
 TRAUB, H. P. 1945. *Herbertia*, 12, 38.
 TSCHSCHOW, W. 1930. *Planta*, 9, 673.
 — 1931. *Izv. Tomskog. otd. Russk. Bor.* 3, 121.
 — 1933. *Bull. appl. Bot., Pl.-Breed. Ser.* 2, 1, 119.
 — 1935. *Trud. biol. nauchn. issledov. Inst.* 3, 143.
 TSCHSCHOW, T. & KARTASCHOWA, N. 1932. *Cytologia*, 3, 221.
 TURESSON, G. 1930. *Hereditas*, 13, 177.
 — 1938. *Ann. Agric. Coll. Sweden*, 5, 405.

- TURNER, B. L. & BEAMAN, J. H. 1953. *Field & Lab.* **21**, 47.
- TUSCHNIAKOWA, M. 1929. *Planta*, **7**, 29.
- 1935. *Züchter*, **7**, 169.
- TUTIN, T. G. 1950. *Watsonia*, **1**, 345.
- TZITZIN, N. V. 1933. *Lenin Ac. Agric. Sci. Sib. Inst. Grain Cult. Omsk*, **101**. Cf. Pl. Br. Abst. **8**, 350 (1936).
- U, N., NAGAMATU, T. & MIDUSIMA, N. 1937. *Cytologia, F.J.N.* **437**.
- UCHIKAWA, I. 1933. *Mem. Coll. Agric. Kyoto*, **25**, **2**, 11.
- 1935. *Jap. J. Genet.* **11**, 308.
- 1943. *Jap. J. Genet.* **19**, 112.
- UDDLING, A. 1929. *Hereditas*, **12**, 294.
- UFER, M. 1937. *Z.i.A.V.* **73**, 390.
- UHL, C. H. 1948. *Amer. J. Bot.* **35**, 695.
- 1952. *Evolution*, **6**, 81.
- 1953. *Cactus & Succ. J., Los Angeles*, **25**, 4.
- UHL, C. H. & MORAN, R. 1953. *Amer. J. Bot.* **40**, 492.
- UJELYI, J. & FELFÖLDY, L. J. M. 1948. *Arch. Biol. Hung.* **18**, 52.
- UPCOTT, M. 1935. *J. Genet.* **31**, 1.
- 1936a. *Cytologia*, **7**, 118.
- 1936b. *J. Genet.* **33**, 135.
- UPCOTT, M. & LA COUR, L. 1936. *J. Genet.* **33**, 237.
- VAARAMA, A. 1939. *J. sci. agric. Soc., Finland*, **11**, 72.
- 1941. *Ann. Bot. Soc. Vanamo*, **16** (2).
- 1943. *Hereditas*, **29**, 191.
- 1947a. *Arch. Soc. Zool. Bot. Fennicae Vanamo*, **2**, 55.
- 1947b. *Hereditas*, **33**, 422.
- 1949a. *Hereditas*, **35**, 136.
- 1949b. *Hereditas*, **35**, 251.
- 1950. *Hereditas*, **36**, 342.
- 1951. *Hereditas*, **37**, 290.
- 1954. *Arch. Soc. zool.-bot. fenn. Vanamo*, **8**, 192.
- VACHELL, E. & BLACKBURN, K. B. 1939. *J. Bot.* **77**, 65.
- VAKAR, B. A. 1936. *Cytologia*, **7**, 293.
- VALCANOVER, R. 1927. *Cellule*, **37**, 203.
- VALENTINE, D. H. 1949. *Rep. Conf. Bot. Soc., Brit. Isles*, 1949, 48.
- 1950. *New Phytol.* **49**, 193.
- VAILOV, N. I. 1935. *Theoretical Bases of Plant Breeding* (Russian), **1**, 17.
- VAZART, J. 1950. *Rév. gén. Bot.* **57**, 517.
- VEATCH, C. 1934. *Bot. Gaz.* **96**, 189.
- VELSER, I. 1913. *Diss. Univ. Bonn*.
- VENKATASUBBAN, K. R. 1944. *Annamalai Univ. Publ.* **1-3**, 1.
- 1945a. *Proc. Indian Acad. Sci.* § B, **21**, 77.
- 1945b. *Proc. Indian Acad. Sci.* § B, **22**, 193.
- 1946. *Proc. Indian Acad. Sci.* § B, **23**, 281.
- 1950. *Proc. Indian Acad. Sci.* § B, **31**, 308.
- VENKATESWARLU, J. 1946. *Curr. Sci.* **15**, 142.
- VENUGOPALAN, S. 1949. *Proc. 36th Indian Sci. Congr.* pt. 3, 137.
- VERMEULEN, P. 1947. *Studies on Dactylorchids*. Utrecht.
- VIGNOLI, L. 1933. *Lav. Ist. bot. Palermo*, **4**, 5.
- 1936. *Lav. Ist. bot. Palermo*, **7**, 3.
- 1939. *Lav. Ist. bot. Palermo*, **10**, 54.
- 1945a. *Nuovo G. bot. ital.* **52**, 1.
- 1945b. *Nuovo G. bot. ital.* **52**, 11.
- VILKOMMERSON, H. 1943. *Bull. Torrey bot. Cl.* **70**, 430.
- VILMORIN, R. DE & SIMONET, M. 1927a. *C.R. Acad. Sci., Paris*, **184**, 164.
- 1927b. *C.R. Soc. Biol., Paris*, **96**, 166.

- VILMORIN, R. DE & SIMONET, M. 1928. *Z.i.A.V. Suppl.* 2, 1520.
- VIVEIROS, A. 1949. *Portug. Acta Biol. Ser. A, R. B. Goldschmidt vol.*, 200.
- 1951. *Rev. Fac. Cienc. Lisb. C*, 1, 215.
- VOS, M. P. DE. 1943. *S. Afr. J. Sci.* 40, 113.
- 1947. *Ann. Univ. Stellenbosch, A*, 25, 1.
- 1951. *J. S. Afr. Bot.* 17, 77.
- WAGNER, S. 1932. *Z.i.A.V.* 61, 76.
- WAGNER, M. DE N. 1948. *Agron. lusit.* 10, 171.
- 1949. *Genet. Iber.* 1, 59.
- WAHL, H. A. 1940. *Amer. J. Bot.* 27, 458.
- WAKAKUWA, S. H. 1931. *Jap. J. Genet.* 7, 17.
- WALKER, R. I. 1942. *Bot. Gaz.* 103, 625.
- 1944. *Bull. Torrey bot. Cl.* 71, 529.
- WALLISCH, R. 1930. *Öst. bot. Z.* 79, 97.
- WALTERS, J. L. 1952. *Amer. J. Bot.* 39, 145.
- WALTERS, M. S. 1952. *Amer. J. Bot.* 39, 619.
- WALTERS, M. S. & GERSTEL, D. U. 1948. *Amer. J. Bot.* 35, 141.
- WALTERS, S. M. 1949. *J. Ecol.* 37, 192.
- WANG, F. H. 1948. *Amer. J. Bot.* 35, 21.
- WANNER, H. 1943. *Planta*, 33, 637.
- WANSCHER, J. H. 1931. *Hereditas*, 15, 179.
- 1932. *Bot. Tidskr.* 42, 49.
- * — 1933. *Bot. Tidskr.* 42, 384.
- 1934. *New Phytol.* 33, 58.
- WARBURG, E. F. 1938. *New Phytol.* 37, 189.
- 1952. In Clapham, A. R. et al. *Flora of the British Isles*, Cambridge.
- WARD, G. H. 1953. *Contr. Dudley Herb.* 4, 155.
- WARMKE, H. E. 1937. *Amer. J. Bot.* 24, 376.
- 1951. *Agron. J.* 43, 143.
- WARMKE, H. E., PEREZ, J. R. & MONGE, J. A. F. 1946. *4th Ann. Rep. Inst. Trop. Agric. Univ. Puerto Rico*, 1945-46, 19.
- WARTH, G. 1925. *Z.i.A.V.* 38, 200.
- WATANABE, K. 1934. *Proc. imp. Acad. Japan*, 10, 421.
- 1935. *Proc. imp. Acad. Japan*, 11, 283.
- 1939. *Proc. Crop Sci. Soc. Japan*, 11.
- WATKINS, G. M. 1936. *Amer. J. Bot.* 23, 328.
- WCISEO, H. 1951. *Bull. Acad. Pol. Sci. Lett. Ser. B*, 1, 147.
- WEBBER, J. M. 1932. *Amer. J. Bot.* 19, 411.
- 1934. *J. agric. Res.* 49, 223.
- 1936. *Cytologia*, 7, 313.
- WEBER, W. A. 1946. *Amer. Midl. Nat.* 35, 400.
- WEBER, W. A. & BREWBAKER, J. L. 1950. *Univ. Colo. Stud. Biol.* 1, 24.
- WEDDLE, C. 1941. *Proc. Amer. Soc. hort. Sci.* 39, 393.
- WEEKS, W. D. 1941. *Proc. Amer. Soc. hort. Sci.* 38, 141.
- WEIJER, J. 1952. *Genetica*, 26, 1.
- WEINDEL-LIEBAU, F. 1928. *Jb. wiss. Bot.* 69, 636.
- WELLER, D. M. 1939. *Hawaii Sugar Planters' Assoc.*, pp. 121.
- WELSH, D. A. 1950. *J. Ecol.* 38, 185.
- WESTERGAARD, M. 1936. *C.R. Lab. Carlsberg, Physiol.* 21, 195, 437.
- 1938. *Dansk bot. Ark.* 9 (5).
- 1940. *Dansk bot. Ark.* 10 (5).
- 1941. *Bot. Tidskr. Copenh.* 45, 338.
- 1942. *K. danske vidensk. Selsk. Skr. (bot.)*, 2, (4).
- 1946. *Hereditas*, 32, 419.
- 1948. *K. danske vidensk. Selsk. Biol. Medd.* 18, 3.
- WESTFALL, J. J. 1949. *Amer. J. Bot.* 36, 805.
- 1950. *Amer. J. Bot.* 37, 667.

- DE WET, J. M. J. 1954a. *Amer. J. Bot.* 41, 204.
 — 1954b. *Cytologia*, 19, 97.
 WETMORE, R. H. & DELISLE, A. L. 1939. *Amer. J. Bot.* 26, 1.
 WETZEL, R. 1929. Diss. Marburg, 60 pp.
 WEXELSEN, H. 1928. *Univ. Calif. Publ. Agric. Sci.* 12, 355.
 WHEELER, H. M. 1935. *Univ. Calif. Publ. Bot.* 18, 45.
 — 1945. *P.N.A.S.* 31, 177.
 WHITAKER, T. W. 1933a. *J. Arnold Arbor.* 14, 113.
 — 1933b. *Bot. Gaz.* 94, 780.
 — 1933c. *J. Arnold Arbor.* 14, 376.
 — 1934a. *J. Arnold Arbor.* 15, 135.
 — 1934c. *J. Arnold Arbor.* 15, 353.
 — 1941. *Proc. Amer. Soc. hort. Sci.* 39, 346.
 — 1950. *Madroño*, 10, 209.
 WHITAKER, T. W. & JAGGER, I. C. 1939. *J. agric. Res.* 58, 297.
 WHITE, O. E., TAYLOR, J. H. & SPEESE, B. M. 1946. *J. Hered.* 37, 66.
 WHYTE, R. O. 1929. *New Phytol.* 28, 319.
 WILKINSON, J. 1941. *Ann. Bot., Lond. n.s.* 5, 149.
 — 1944. *Ann. Bot., Lond. n.s.* 8, 269.
 WILSON, G. B. 1946. *Genetics*, 31, 475.
 — 1947. *Nature*, 160, 121.
 WILSON, G. B. & BOOTHROYD, E. R. 1941. *Canad. J. Res. § C*, 19, 400.
 WINGE, Ø. 1917. *C.R. Trav. Lab. Carlsberg*, 13, 131.
 — 1925. *Cellule*, 35, 303.
 — 1926. *Beretn. Nord. Jordbrugs-forsk. Kongr. Oslo*, 592.
 — 1940. *C.R. Trav. Lab. Carlsberg*, 23, 41.
 WINKLER, H. 1906. *Ann. Jard. bot. Buitenzorg*, Ser. 2, 5.
 WINTER, B. DE. 1951a. *Bothalia*, 6, 117.
 — 1951b. *Bothalia*, 6, 139.
 WITKUS, E. R. 1951. *Bull. Torrey bot. Cl.* 78, 80.
 WITSCH, H. 1932. *Öst. bot. Z.* 81, 108.
 WITTE, M. B. 1947. *Bull. Torrey bot. Cl.* 74, 443.
 WITTLAKE, E. H. 1940. *Herbertia*, 7, 166.
 WOESS, E. T. 1947. *Chromosoma*, 3, 66.
 — 1948. *Öst. bot. Z.* 95, 270.
 — 1949. *Öst. bot. Z.* 96, 56.
 WOESS, F. v. 1941. *Z.i.A.V.* 79, 444.
 WOLCOTT, G. B. 1937. *Amer. Nat.* 71, 190.
 WOLF, P. 1929. *Beitr. Biol. Pfl.* 17, 351.
 WOOD, C. E. 1949. *Rhodora*, 51, 193, 233, 305, 369.
 WOODARD, J. W. 1951. *Bull. Amer. Orchid Soc.* 20, 356.
 — 1952. *Bull. Amer. Orchid Soc.* 21, 247.
 WOODWORTH, R. H. 1929a. *Bot. Gaz.* 87, 331.
 — 1929b. *Bot. Gaz.* 88, 383.
 — 1930c. *Amer. J. Bot.* 17, 863.
 — 1931. *J. Arnold Arbor.* 12, 206.
 WOYCICKI, Z. 1906. *Bull. Acad. Sc. Cracovie Sc. Math. & Nat.* 506.
 — 1937. *Cytologia*, F.J.N. 1094.
 WRIGHT, F. R. E. 1936. *J. Bot.* 74, suppl. 1.
 — 1938. *J. Bot.* 76, suppl. 1.
 WRIGHT, J. W. 1944. *J. For.* 42, 489.
 WU, S. H. 1942. *Pap. Mich. Acad. Sci. Art. Lett.* 27, 117.
 WULFF, H. D. 1933. *Planta*, 21, 12.
 — 1934a. *Ber. deutsch. bot. Ges.* 52, 43.
 — 1935. *Beih. bot. Zbl.* 54, Abt. A, 83.
 — 1936. *Planta*, 26, 275.
 *— 1937a. *Jb. wiss. Bot.* 84, 812.
 — 1937b. *Ber. deutsch. bot. Ges.* 55, 262.

- WULFF, H. D. 1938. *Ber. deutsch. bot. Ges.* **56**, 247.
 — 1939a. *Ber. deutsch. bot. Ges.* **57**, 84.
 WULFF, H. D. 1939b. *Ber. deutsch. bot. Ges.* **57**, 424.
 — 1940a. *Planta*, **31**, 478.
 — 1944. *Bot. Arch.* **45**, 149.
 — 1950. *Ber. deutsch. bot. Ges.* **63**, 64.
 — 1954. *Arch. Pharm.* **287**, 529.
 WUNDERLICH, R. 1937. *Flora*, **132**, 48.
 WYLIE, A. P. 1952. *Heredity*, **6**, 137.
 — 1954. *Am. Rose Annual*, **39**, 36.
- YAKAR, N. 1945. *Rev. Fac. Sci. Univ. Istanbul*, Ser. B, **10**, 299.
 YAKOVLEVA, S. V. 1933. *Bull. appl. Bot.* Ser. II, **5**, 207.
 YAMAHA, G. & SUEMATSU, S. 1936. *Sci. Rep. Tokyo Univ.* Ser. B, **3**, 21.
 YAMAMOTO, K. & SAKAI, K. 1932. *Jap. J. Genet.* **8**, 27.
 YAMAMOTO, Y. 1934. *Cytologia*, **5**, 317.
 — 1937. *Cytologia*, F.J.N. 181.
 YAMANE, Y. 1950. *Jap. J. Genet.* **25**, 220.
 YAMASHITA, K. 1935. *Jap. J. Genet.* **11**, 360.
 — 1937. *Agric. & Hort.* **12**, 1219.
 YAMAURA, A. 1933. *Bot. Mag. Tokyo*, **47**, 551.
 YAMAZAKI, R. 1936. *Jap. J. Genet.* **12**, 101.
 YAMAZAKI, Y. 1934. *Agric. Hort.* **9**, 156.
 — 1937. *Jap. J. Genet.* **13**, 393.
 YARNELL, S. H. 1929. *Genetics*, **14**, 78.
 — 1931a. *Genetics*, **16**, 422.
 — 1931c. *Proc. Amer. Soc. hort. Sci.* **28**, 114.
 — 1936. *J. agric. Res.* **52**, 385.
 YASUI, K. 1935. *Cytologia*, **6**, 484.
 — 1936a. *Cytologia*, **7**, 535.
 — 1937. *Bot. Mag. Tokyo*, **51**, 539.
 — 1939. *Cytologia*, **10**, 180.
 — 1941. *Cytologia*, **11**, 452.
 YATES, J. J. & BRITTAN, N. H. 1952. *Austr. J. Agric. Res.* **3**, 300.
 YEO, P. F. 1954. *Watsonia*, **3**, 101.
 YOUNG, J. O. 1940. *Bot. Gaz.* **101**, 839.
 YOUNGMAN, W. 1927. *Ann. Bot., Lond.* **41**, 755.
 — 1931. *Ann. Bot., Lond.* **45**, 49.
- ZAIKOVSKAJA, N. E. 1939. *C.R. Acad. Sci. U.R.S.S.* **23**, 944.
 ZAITZEW, G. S. 1927. *Bull. appl. Bot., Pl.-Breed.* **18**, 1.
 ZEEUW, J. DE. 1936. *Cellule*, **44**, 389.
 ZERPA, D. M. DE. 1951. *Agron. Trop. Venezuela*, **1**, 83.
 — 1952. *Agron. Trop. Venezuela*, **2**, 215.
 ZHEBRUK, A. 1944. *Nature*, **153**, 549.
 ZIELINSKI, Q. B. 1953. *Bot. Gaz.* **114**, 265.
 ZIMMERMANN, W. 1932. *Jb. wiss. Bot.* **77**, 393.
 ZINNAI, I. & CHIBA, S. 1951. *Jap. J. Breed.* **1**, 43.
 ZOHARY, M. 1953. *Palest. J. Bot. Jerus.* **5**, 4.
 ZOSSIMOVICH, V. P. 1939. *C.R. Acad. Sci. U.R.S.S.* **24**, 69.
 ZUNDORF, W. 1939. *Z.I.A.V.* **77**, 195.

INDEX TO FAMILIES AND GENERA

Family names, capitals

Genus names asterisked—counts summarised

Page references to figures in *italics*

- | | | |
|--------------------|--------------------|--------------------|
| Abelia 241 | Adromischus 54 | Allamanda 229 |
| Abeliophyllum 227 | Aechmea* 343 | Alliaria 41 |
| Abies 5 | Aegilops 450 | Allionia 90 |
| Abrus 171 | Aegilotricum 453 | Allium* 355, 357 |
| Abutilon* 122 | Aegle 194 | Alloteropsis 425 |
| Acacia 151 | Aeglopsis 193 | Alnus 179 |
| Acalypha 128 | Aegopodium 207 | Alocasia 375 |
| ACANTHACEAE 321 | Aeluropus 429 | Aloe* 362 |
| Acanthocereus 102 | Aeonium 55 | Alonsoa 309 |
| Acantholimon 282 | Aerides 407 | Alopecurus 437 |
| Acantholippia 324 | Aeschynomene 158 | Aloysia 324 |
| Acanthopanax 204 | Aesculus 187, 197 | Alpinia 346 |
| Acanthostachys 343 | Aethionema* 37 | Alsine 62 |
| Acanthus 322 | Aethusa 205 | Alstroemeria 373 |
| Acer 198 | Afraegle 193 | ALSTROEMERIACEAE |
| ACERACEAE 198 | Agapanthus 362 | 373 |
| Aceranthus 27 | Agathis 4 | Althaea 121 |
| Aceras 409 | AGAVACEAE 393 | Alyssum* 42 |
| Achillea* 268 | Agave* 394, 395 | Amana 361 |
| Achlys 27 | Ageratum 270 | AMARANTHACEAE 77 |
| Achras 225 | Aglaonema 373 | Amaranthus 78 |
| Achyranthes 77 | Agonis 110 | AMARYLLIDACEAE 377 |
| Acinos 328 | Agoseris* 251 | Amaryllis 381 |
| Aciphylla 206 | Agrimonia 141 | Amberboa 262 |
| Acnistus 303 | Agropyron* 452 | Ambrosia 254 |
| Aconitum* 20 | Agrostemma 62 | Ambrosinia 374 |
| Acorus 374 | Agrostis* 436 | Amburana 148 |
| Acroceras 425 | Agrotriticum 453 | Amelanchier 145 |
| Acronychia 196 | Aichryson 55 | Amelosorbus 147 |
| Acrotriche 220 | Ailanthus 196 | Amherstia 149 |
| Actaea 20 | Aiphanes 398 | Ammi 206 |
| Actinidia 109 | Aira 447 | Ammobium 260 |
| ACTINIDIACEAE 109 | Airopsis 447 | Ammocharis 381 |
| Actinodium 110 | Ajuga 328 | Ammophila 436 |
| Actinophloeus 396 | Akebia 29 | Amorum 346 |
| Actinostemma 98 | ALANGIACEAE 203 | Amorpha 165 |
| Actinotus 209 | Alangium 203 | Amorphophallus 374 |
| Adelocaryum 295 | Albizzia 152 | AMPELIDACEAE 192 |
| Adenocalymma 319 | Albuca 353 | Ampelodesmos 457 |
| Adenophora 289 | Alchemilla 142 | Ampelopsis 192 |
| Adenostyles 270 | Alectorolophus 315 | Amphicarpa 170 |
| Adesmia 156 | Alectorurus 365 | Amphicarpum 424 |
| Adhatoda 322 | Aletris 370 | Amphilophis 419 |
| Adlumia 35 | Aleurites 129 | Amphilophium 320 |
| Adonis 25 | Alisma 336 | Amsinckia 294 |
| Adoxa 243 | ALISMATACEAE 336 | Anacamptis 406 |
| ADOXACEAE 243 | Alkanna 297 | ANACARDIACEAE 198 |

Anacardium 199
Anacharis 335
Anacyclus 267
Anagallis 280
Anagracum 407
Ananas 344
Anaphalis 259
Anarrhinum 313
Anchusa 294, 295, 297
Andersonia 221
Andira 172
Andromeda 216
Andropogon 419, 420, 421
Androsace 280
Andryala* 250
Aneilema 339
Anemarrhena 365
Anemone* 23
Anemonella 21
Anemopaegma 319
Anemopsis 19
Anethum 206
Angelica 210
Angelonia 314
Angophora 110
Anguillaria 369
Anigozanthus 403
Anisocoma 248
Anisoptera 110
Annona *II*, 15
ANNONACEAE 15
Anoda 126
Anogra 87
Anoiganthus 380
Antennaria 259
Anthemis 267
Anthepphora 424
Anthericum 364
Anthochloa 446
Antholyza 388, 389
Anthoxanthum 438
Anthriscus 207
Anthurium* 376
Anthyllis 158
Antigonon 74
Antirrhinum* 312, 313, 314
Apargidium 250
Apatesia 66
Apera 435
Aphanes 142
Apicra 363
Apios 170
Apium 206
Apluda 419
APOCYNACEAE 229
Apocynum, 230
Aposeria 249
Aptenia 66

AQUIFOLIACEAE 189
Aquilegia* 22
Arabidopsis 40
Arabis 42
ARACEAE 373
Arachis 158
Aragonia 320
Aralia 204
ARALIAACEAE 204
Araucaria 4
ARAUCARIACEAE 4
Araujia 230
Arbutus 216
Arctagrostis 438
Arctium 262
Arctophila 446
Arctostaphylos 216
Arctotis 265
Arctous 216
Ardisia 225
Areca 396
Arecastrum 396
Aregelia 343
Arenaria 61
Arenga 396
Argemone 34
Argyllia 318
Argyreia 308
Argyroderma 66
Argyrolobium 167
Aridaria* 68
Arikuryroba 396
Ariocarpus 105
Ariopsis 376
Arisaema* 375
Aristida 434
Aristolochia 29
ARISTOLOCHIAACEAE 29
Armeria 281
Armoracia 40
Arnica 264
Arnoseris 250
Aronia 145
Arrabidaea 319
Arrhenatherum 448
Artabotrys 15
Artemisia* 266
Arthraxon 422
Arthrocnemum 77
Arthropodium 365, 366
Arthrosamanea 152
Artocarpus 184
Arum 375
Arundinaria 457
Arundinella 429
Arundo 457
Asarina 313
Asarum 29

ASCLEPIADACEAE 230
Asclepias 230
Ascotainia 406
Asimina* 15
Asparagus 369
Asperugo 295
Asperula* 235
Asphodeline 364
Asphodelus 364
Aspidistra 371
Astelia 368
Aster* 255, 257
Asteriscus 258
Asterolasia 195
Asteromoea 257
Astilbe 56
Astilboides 58
Astragalus* 163, 164
Astranthium 255
Astrantia 208
Astrebla 434
Astridia 66
Astrocarpus 50
Astrodaucus 208
Astroloba 363
Astroloma* 220
Astronium 199
Astrophytum* 102
Asyneuma 287
Atalantia 193
Atamisquea 36
Ateleia 170
Athamantha 206
Athrotaxis 4
Atractylis 261
Atraphaxis 74
Atrichoseris 250
Atriplex* 76
Atropa 307
Attalea 397
Atylosia 171
Aubrietia 42
Aucuba 203
Aulax* 91
Avena 447, 448
Averrhoa 85
Axonopus 427
Azorella 209

Babiana 384
Baccharis 256
Backhousia 110
Baeckea* 111
Baeometra 369
Balanites 82
Balanophora 190

BALANOPHORACEAE

190

Baldellia 336**Baliospermum** 128**Ballota** 329**BALSAMINACEAE** 85**Balsamorhiza** 255**Bambusa** 458**Banisteria** 126**Banksia** 90**Baptisia** 166**Barbarea*** 43**Bartonia** 36, 276**Bartschia** 316**Bartsia** 316**Bartlingia** 368**Basella** 78**BASELLACEAE** 78**Bassia*** 75, 225**Bastardia** 121**Bauera** 133**Bauhinia** 150**Beckmannia** 432**Begonia** 100**BEGONIACEAE** 100**Belairia** 169**Belamcanda** 388**Bellevia** 351**Bellis** 255, 257**Bellium** 257**Benincasa** 100**Benzoïn** 16**BERBERIDACEAE** 27**Berberis*** 28**Bergenia** 59**Bergeranthus*** 68**Bergia** 59**Berkheya** 265**Bernardia** 130**Berteroia** 42**Berula** 205**Beschorneria** 394**Beta** 76**Betonica** 324**Betula** 175, 180**BETULACEAE** 179**Bidens** 254**Bifora** 210**Bignonia** 319, 320**BIGNONIACEAE** 318**Bijlia** 66**Billbergia*** 343**Biscutella*** 38**Biserrula** 163**Bivonaea** 39**Bixa**, 95**BIXACEAE** 95**Blackstonia** 276**Blennosperma** 264**Blepharidachne** 440**Bletia** 406**Bletilla** 406**Bloomeria** 355**Blumenbachia** 36**Blysmus** 416**Blyxa** 335**Bocconia** 34**Boehmeria** 185**Boenninghausenia** 195**Boissiera** 440**Boltonia** 257**Bomarea** 373**BOMBACACEAE** 120**Bombax** 120**Bongardia** 28**Boöphone** 381**Bootia** 335**BORAGINACEAE** 294**Borago** 296**Borassus** 398**Borderea** 393**Boronia*** 194**Borzicactus** 102**Bothriochloa** 421**Bougainvillea** 90**Boussingaultia** 77**Bouteloua** 432**Bouvardia** 235**Bowenia** 3**Bowiea** 369**Bowlesia** 209**Boykinia** 58**Brabeium** 90**Brachiaria** 424**Brachychilus** 346**Brachycyrtis** 370**Brachyelytrum** 455**Brachyloma** 220**Brachypodium** 446**Brahea** 396**Brassavola** 407**Brassica** 46**Bravoa** 394**Braya** 41**Bredemeyera** 50**Brevoortia** 355**Breynia** 130**Bridelia** 130**Briza** 439**Brodiaea** 354, 355**Bromelia** 343**BROMELIACEAE** 343**Bromus*** 441**Brosimum** 183**Broussonetia** 183**Browallia** 302**Brownea** 149**Bruckenthalia** 215**Brunella** 328**Brunfelsia** 303**Brunnera** 294**Brunsvigia** 381**Bryonia** 99**Bryophyllum*** 55**Buchloë** 434**Buckleya** 190**Buddleia** 226**Bulbine** 365**Bulbinella** 364**Bulbocodium** 368**Bulbostylis** 414**Bulnesia** 82**Bumelia** 225**Bunias** 44**Buphthalmum** 258**Bupleurum** 205**BURSERACEAE** 197**Butia** 397**BUTOMACEAE** 335**Butomus** 335**BUXACEAE** 177**Buxus** 177**Cabomba** 27**Cacalia** 262, 264**Caccinia** 294**CACTACEAE** 101**CAESALPINACEAE** 147**Caesalpinia** 149**Calophora** 35**Cajanus** 171**Cakile** 47**Caladium** 376**Calamagrostis*** 437**Calamintha** 328, 329**Calamus** 396**Calandrinia** 71**Calanthe*** 407**Calathea** 347**Calceolaria** 313**Calendula** 266**Calepina** 45**Calla** 373**Calliandra** 150**Callianthemum** 25**Callicarpa** 323**Callichlamys** 319**Callipeltis** 236**Callirhoe** 121**Callisia** 338**Callistemma** 244**Callistemon*** 112**Callistephus** 257**CALLITRICHACEAE** 89

Callitriche 89
 Callitris 6
 Calluna 215
 Calochortus 357
 Calodendrum 196
 Calonyction 308
 Calophaca 163
 Calophyllum 115
 Calopogonium 172
 Caloscordum 357
 Calothamnus 111
 Caltha 21
 Calvoa 114
 Calycadenia 251
CALYCANTHACEAE 147
 Calycanthus 147
 Calycoseris 248
 Calystegia 307
 Calypso 405
 Calythrix 111
 Camassia 354
 Camelina 41
 Camellia 109
 Camoensia 169
 Campanula* 285, 287
CAMPANULACEAE 287
 Campelia 339
 Camphorosma 75
 Campsis 319
 Cananga 15
 Canarium 15
 Canavalia 171
CANELACEAE 95
 Canistrum 343
 Canna 347
CANNABINACEAE 185
 Cannabis 185
CANNACEAE 347
 Cantua 292
 Capillipedium 419
 Capnophyllum 211
CAPPARIDACEAE 36
 Capparis 36
CAPRIFOLIACEAE 240
 Capsella 39
 Capsicodendron 95
 Capsicum 303
 Caragana 164
 Caraguata 343
 Cardamine* 43
 Cardaminopsis 43
 Cardaria 39
 Cardiocrinum 359
 Cardiospermum 197
 Carduus 261, 262
 Carex* 414
 Carica 101
CARICACEAE 101

Carissa 230
 Carlina 261
 Carludovica 399
 Carmichaelia 164
 Carnegiea 102
 Carpanthea 66
 Carpinus 181
 Carpobrotus* 66
 Carrichtera 46
 Carruanthus 66
 Carthamus 262
 Carum 205
 Carya 199
 Caryolopha 297
CARYOPHYLLACEAE 60
 Caryota 397
 Cassia 148
 Cassiope 216
 Castanea 181
 Castanospermum 170
 Castelia 324
 Castilleja 316
 Castilloa 184
 Casuarina 182
CASUARINACEAE 182
 Catabrosa 439
 Catalpa 319
 Catananche 250
 Catapodium 440
 Catesbaea 239
 Catharanthus 230
 Cattleya* 407
 Caucalis 207
 Caulanthus 48
 Caulophyllum 28
 Cayratia 192
 Ceanothus* 191
 Cecropia 184
 Cedrela 197
 Cedrus 5
 Ceiba 120
CELASTRACEAE 189
 Celastrus 189
 Celosia 78
 Celsia 315
 Celtis 182
 Cenarrhenes 90
 Cenchrus 427
 Cenia 267
 Centaurea* 260
 Centaurium 275
 Centotheca 457
 Centranthus 243
 Centrosema 170
 Centunculus 280
 Cephaelis 237
 Cephalandra 100

Cephalanthera 401, 406
 Cephalanthus 239
 Cephalaria 244
 Cephalocereus 105
 Cephalophyllum 68
 Cephalorrhynchus 250
CEPHALOTAXACEAE 4
 Cephalotaxus 4
 Cerastium* 60, 61
 Ceratonia 149
 Ceratopetalum 133
CERATOPHYLLACEAE 26
 Ceratophyllum 26
 Ceratostigma 281
 Ceratotheca 321
 Ceratozamia 3
 Cerbera 229
CERCIDIPHYLLACEAE 14
 Cercidiphyllum 14
 Cercis 147
 Cercocarpus 142
 Cereus* 103
 Cerinthe 297
 Cerochlamys 66
 Ceropegia 231
 Cestrum 301
 Chaenomeles 144
 Chaenorrhinum 309
 Chaerophyllum 208
 Cheatadelpha 250
 Chaeturus 435
 Chamaealoe 362
 Chamaecyparis 6
 Chamaedorea 396
 Chamaelaucium 110
 Chamaenerion 88
 Chamaeorchis 409
 Chamaepericlymenum 203
 Chamaerops 398, 399
 Chamaescilla 365
 Chaptalia 271
 Chasmanthe 388
 Cheiranthus 44
 Cheiridopsis 68
 Chelidonium 37, 33
 Chelone 313
 Chenolea 75
CHENOPODIACEAE 75
 Chenopodium* 76
 Chikusichloa 455
 Chilianthus 226
 Chilopsis 319
 Chimaphila* 216
 Chimonanthus 147
 Chimonobambusa 457, 458
 Chionachne 417

Chionanthus 227
 Chionodoxa 354
 Chionographis 370
 Chirita 318
 Chlora 276
CHLORANTHACEAE 30
 Chloranthus 30
 Chloridion 425
 Chloris* 433
 Chlorogalum 365
 Chlorophytum 365
 Chomelia 236
 Chondrilla* 247
 Chordospartium 164
 Chorilaena 195
 Chorispora 42
 Chrozophora 130
 Chrysalidocarpus 396
 Chrysanthemum 267
 Chrysobactron 364
 Chrysophyllum 225
 Chrysopogon 419
 Chrysosplenium 58
 Cicer 156
 Cicerbita 250
 Cichorium 250
 Ciclospermum 204
 Cicuta 206
 Cienfugosia 124
 Cimicifuga 20
 Cinchona 240
 Cineraria 262
 Cinna 437
 Cinnamomum 15
 Circaea* 88
 Cirsium* 261
 Cissus 192
CISTACEAE 96
 Cistanche 317
 Cistus 93, 96
 Citrullus 99
 Citrus* 193
 Cladanthus 267
 Cladium 415
 Cladrastis 170
 Clappertonia 119
 Clarkia 86
 Clausena 193
 Claytonia 71
 Cleistachne 422
 Cleistogenes 430
 Clematis* 17, 25
 Cleome 36, 37
 Clerodendron 324
 Clethra 215
CLETHRACEAE 215
 Clianthus 163

Clinopodium 329
 Clintonia 366
 Clitoria 170
 Clivia 381
 Clypeola 42
 Clytostoma 319
 Cnicus 261
 Cnidium 207
 Cobaea 292
 Coccinia 100
 Coccoloba 74
 Coccothrinax 398
 Cocculus 29
 Cochlearia 38
 Cochliostema 340
 Cocos 396, 397
 Codonopsis 287
 Coeloglossum 407
 Coelogyne 407
 Coelorrachis 422
 Coffea 237
 Coix 417
 Cola 120
 Colchicum 368
 Coleanthus 436
 Coleonema 196
 Coleotrype 340
 Coleus 325
 Colletia 191
 Colliguaja 129
 Collinia 396
 Collinsia 309
 Collomia 291
 Colocasia 374
 Columella 192
 Colutea 163
 Coluteocarpus 38
 Colvillea 150
 Comarum 139
COMBRETACEAE 114
 Commelina 339
COMMELINACEAE 338
 Commelinantia 340
 Commiphora 197
COMPOSITAE 245
 Comptonia 179
 Conicosia* 66
 Conium 210
 Conophyllum 66
 Conophytum 69
 Conopodium 206
 Conospermum 91
 Conringia 45
 Consolea 102
 Convallaria 371
CONVOLVULACEAE 307
 Convolvulus 307
 Cookia 193

Cooperia 378
 Copaifera 149
 Copernicia 398
 Coprosma 238
 Coptis 26
 Corallorhiza 409
 Coralliospartium 164
 Corchorus 119
 Cordia 296
 Cordyline 394
 Coreopsis 254
 Coriandrum 210
 Coriaria 95
CORIARIACEAE 95
 Corispermum 76
CORNACEAE 179, 203
 Cornucopiac 435
 Cornus* 203
 Corokia 203
 Coronilla 156
 Coronopus 39
 Corpuscularia 66
 Correa 195
 Corrigiola 75
 Cortaderia 457
 Cortia 206
 Cortusa 280
 Corydalis 35
CORYLACEAE 181
 Corylopsis 177
 Corylus 181
 Corynephorus 447
 Corypha 399
 Coryphantha 103
 Corytholoma 317
 Cosmelia 221
 Cosmos 254
 Cossonia 45
 Costus 345
 Cotoneaster* 145
 Cottea 434
 Cotula 269
 Cotyledon* 54
 Couroupita 113
 Cousinia 262
 Cracca 163
 Crambe 48
 Craspedorachis 433
 Crassocephalum 263
 Crassula* 54
CRASSULACEAE 53
 Crataegus 145
 Crataeva 37
 Cratoxylon 115
 Crepidiastrum 247
 Crepis* 245, 247, 249
 Crescentia 319
 Cressa 308

Crinum 381
 Crithmum 206
 Crocanthemum 96
 Crocosmia 389
 Crocus 383
 Crotalaria* 166
 Croton 128
 Crowea 196
 Crucianella* 235, 238
 CRUCIFERAE 37
 Crupina 262
 Cryophytum* 67
 Crypsis 430
 Cryptanthus 343
 Cryptocoryne 375
 Cryptomeria 4
 Cryptostegia 231
 Cryptostephanus 380
 Cryptotaenia 206
 Ctenanthe 347
 Cucubalus 62
 Cucumis 98
 Cucurbita 99
 CUCURBITACEAE 98
 Cucurbitella 100
 Cudrania 185
 Culcasia 376
 Cuminum 210
 Cunninghamia 4
 CUNONIACEAE 133
 Cuphea 86
 CUPRESSACEAE 6
 Cupressus 6
 Curculigo 403
 Curcuma 346
 Curtomis 389
 Cuscuta* 307
 Cutandia 440
 Cuthbertia 338
 Cyamopsis 163
 Cyanastrum 371
 Cyanotis 339
 Cybistetes 381
 CYCADACEAE 3
 Cycas 3
 Cyclamen 276
 CYCLANTHACEAE 399
 Cyclanthera 98
 Cyclolepis 271
 Cydonia 144
 Cydista 319
 Cy lindroph yllum 67
 Cymbalaria 309
 Cymbidium* 408
 Cymbopogon 419
 Cynanchum 231
 Cynara 262
 CYNOCRAMBACEAE 75

Cynodon 433
 Cynoglossum* 294
 Cynomorium 190
 Cynosurus 440
 Cynoxylon 203
 Cypella 384
 CYPERACEAE 414
 Cyperus 415
 Cyphomandra 303
 Cyripedium 403
 Cyrtanthus 380
 Cyrtostachys 397
 CYTINACEAE 29
 Cytisus 168, 169

Daboecia 213, 215
 Dactylaena 37
 Dactylis 440
 Dactyloctenium 430
 Dactyloopsis 67
 Dactylorchis 406
 Daedalacanthus 322
 Daemia 231
 Dahlia 253
 Dalbergia 173
 Dalea 163
 Danae 373
 Danthonia 449
 Danthoniopsis 428
 Daphne 79, 89
 Daphniphyllum 129
 Darlingtonia 59
 Darwinia* 110
 Dasylyrion 394
 Datisca 101
 DATISCEAE 101
 Datura* 303
 Daucus 209
 Davidia 203
 Decaisnea 29
 Decodon 86
 Deinanthe 134
 Delonix 150
 Delosperma* 69
 Delphinium* 20
 Dendrobenthamia 203
 Dendrobium 404
 Dendrocalamus 458
 Dendrochilum 408
 Dendromecon 34
 Dendrophthora 190
 Dendroseris 251
 Dentaria 43
 Dentella 235
 Derris 173
 Descantheria 339
 Deschampsia 448
 Descurainia 40

Desfontainea 226
 Desmanthus* 153
 Desmazeria 440
 Desmodium* 158
 Deutzia 134
 Dialium 150
 Diamorpha 54
 Dianella 368
 Dianthus* 63
 Diapensia 221
 DIAPENSIACEAE 221
 Diascia 314
 Dicellandra 114
 Dicentra 35
 Dichanthium 421
 Dichelostemma 355
 Dichondra 308
 Dichopogon 366
 Dichorisandra 340
 Dichrostachys 153
 Dicliptera 322
 Dicranostigma 33
 Dictamnus 196
 Dictyosperma 397
 Didiscus 209
 Didymaotus 67
 Didymocarpus 318
 Didymosperma 396
 Diectomis 419
 Dieffenbachia 373
 Dierama 388
 Diervilla 241
 Digera 77
 Digitalis 310
 Digitaria 426
 Dillenia 95
 DILLENIACEAE 95
 Dimorphandra 150
 Dimorphotheca 266
 Dinebra 433
 Dinophora 113
 Dinteranthus 67
 Dioclea 172
 Dionaea 59
 Dion (Dion) 3
 Dioscorea 391, 393
 DIOSCOREACEAE 393
 Diospyros 225
 Diostea 322
 Diotis 267
 Dipcadi 352
 Diphylla 27
 Diphyssa 163
 Dipidax 369
 Diplachne 430
 Diplacus 310, 314
 Diplolaena 196
 Diplotaxis 46

DIPSACACEAE 244
Dipsacus 244
Dipteracanthus 322
DIPTEROCARPACEAE
109

Dipterocarpus 110
Disphyma 69
Disporopsis 367
Disporum 366
Dissotis 113
Distichlis 439
Distylium 177
Dodecatheon 280
Dolichandrone 319
Dolichos 171
Dolichothele 103
Dombeya 120
Dopatrium 309
Doronicum 264
Dorotheanthus 67
Dorstenia 183
Doryanthes 394
Dorycnium 159
Draba* 40
Dracaena 394
Dracocephalum 324
Dracophyllum 221
Dracunculus 376
Draperia 293
Drimiopsis 353
Drimys 14
Drosanthemum 69
Drosera 59
DROSERACEAE 59
Drosophyllum 59
Drusa 209
Dryandra 90
Dryas 142
Drymaria 61
Drymophila 367
Drypis 63
Duboisia 307
Dubyaea* 249
Duchesnea 138
Dudleya* 55
Dulichium 416
Dupontia 446
Duranta 324
Dyckia 343
Dypsis 396
Dysoxylum 197

EBENACEAE 225

Eberlanzia 69
Ecballium 100
Eccolopus 421
Echeandia 365
Echeveria 55

Echinacea 253
Echinocactus 103
Echinocereus* 104
Echinochloa 425
Echinocystis 98
Echinodorus 336
Echinofossulocactus 103
Echinops 262
Echinopsis* 103
Echinosparton 169
Echinosperrum 297
Echinus 67
Echium* 296
Eclipta 253
Edgeworthia 89
Edraianthus 287
Ehretia 297
Ehrharta 456
Eichhornia 372

ELAEAGNACEAE 191

Elaeagnus 191
Elaeis 397

ELATINACEAE 59

Elatine 60
Elatinoides 314
Eleocharis (Heleocharis) 414

Eleogiton 416
Elcorchis 408
Elephantopus 269
Eletteria 346
Eleusine 429, 430
Elisaena 382
Ellisia 292
Elodea (Helodea) 335
Elymus* 450
Elyna 416
Elyonurus 419
Elytraria 322
Emex 73
Emilia 262
Eminium 375
Emmenanthe 293

EMPETRACEAE 189

Empetrum 189
Encephalartos 3
Endymion 353
Enhalus 335
Enicostoma 276
Enkianthus 216
Enneapogon 434
Ensete 344
Entada 150
Enterolobium 151
Enteropogon 434
EPACRIDACEAE 219
Epacris* 221
Ephedra 7

EPHEDRACEAE 7

Epidendrum* 408
Epilobium* 88
Epimedium 27, 28
Epipactis 404
Epiphyllum 103
Epipremnum 376
Eragrostis* 429
Eranthemum 322
Eranthis 20
Erechtites 264
Eremocarpus 129
Eremochloa 422
Eremopogon 421
Eremopyron 452
Eremurus 364
Erepisia 67
Erianthus 421
Erica 215
ERICACEAE 215
Erigeron 257
Erinus 309
Eriobotrya 144
ERIOCAULACEAE 340
Eriocaulon 340
Eriochloa 426
Eriodendron 120
Eriodictyon* 293
Eriophorum 416
Eriosema 171
Eriostemon 195
Erodium* 83
Erophila 40
Eruca 47
Erucastrium 46
Ervatamia 230
Eryngium* 208
Erysimum 45
Erythraea 275
Erythrina 172
Erythronium* 361
Erythrophloeum 149
ERYTHROXYLACEAE 126
Erythroxylon 126
Escallonia 133
ESCALLONIACEAE 133
Eschscholtzia 33
Escobaria 103
Eucalyptus 107, 111
Eucharis 383
Euchlaena 417
Euclasta 421
Euclidium 44
Eucomis 354
Eucommia 177
EUCOMMIACEAE 177
Eucrypta 293

Eugenia 112
 Eunomia 38
 Euonymus 189
 Eupatorium* 270
 Euphorbia* 126
EUPHORBIACEAE 126
 Euphoria 197
 Euphrasia* 316
 Eupomatia 15
EUPOMATIACEAE 15
 Eupritchardia 398
 Euptelea 14
 Eurotia 77
 Eurya 109
 Euryale 27
 Eustoma 276
 Eutrema 41
 Evax 260
 Evodia 196
 Exacum 276
 Exochorda 144
 Exocoecaria 130
 Exogonium 308
 Exorrhiza 397
 Exostemma 236

 Fabiana 301
FAGACEAE 181
 Fagonia 82
 Fagopyrum 72
 Fagraea 225
 Fagus 181
 Falcaria 206
 Farsetia 42
 Fatsia 204
 Faucaria* 69
 Fauria 276
 Fedia 244
 Feijoa 112
 Felicia 256
 Ferocactus* 103
 Feronia 193
 Ferula 211
 Festuca 441, 442, 443
FICOIDACEAE 65
 Ficus 183
 Filago 259
 Filipendula 142
 Fimbristylis* 414
 Firmiana 120
 Flacourtia 95
FLACOURTIACEAE 95
 Flaveria 265
 Flindersia 197
 Fluggea 130
 Fluminea 446
 Foeniculum 206
 Fontanesia 227

Forestiera 227
 Forsythia 227
 Fortunella 194
 Fothergilla 177
 Fouquiera 97
FOUQUIERACEAE 97
 Fragaria 138
 Francoa 58
 Frankenia 97
FRANKENIACEAE 97
 Fraxina 276
 Fraxinus 223, 228
 Freesia 389
 Fremontia 120
 Fritillaria 358, 359
 Fuchsia 88
 Fugosia 124
 Fumana 96
 Fumaria 35
FUMARIACEAE 35
 Funkia 395
 Furcraea (Fourcroya) 394

 Gagea 361
 Gaillardia 265
 Galactia 170
 Galanthus 378
 Galax 221
 Galedupa 173
 Galega 163
 Galeobdolon 329
 Galeopsis* 328
 Galinsoga 253
 Galium* 235
 Galtonia 353
 Garcinia 115
 Gardenia 236
 Garhadiolus 247
 Garnotia 438
 Garrya 179
GARRYACEAE 179
 Gasteria* 363
 Gastridium 435
 Gaudinia 447
 Gaultheria 215
 Gaulthetia 215
 Gaura 87
 Gaylussacia 218
 Gayophytum 88
 Gazania 265
 Geffroea 173
 Geigeria 196
 Geleznovia 195
 Gelonium 130
 Gelsemium 226
 Genista 169
 Gentiana* 275
GENTIANACEAE 275

Gentianella 275
GERANIACEAE 82
 Geranium* 83
 Gerbera 270
 Gesneria 317
GESNERIACEAE 317
 Geum* 141
 Gibbaeum* 69
 Gilia 291
 Ginkgo 3
GINKGOACEAE 3
 Gisekia 65
 Gladiolus* 389, 390
 Glaucidium 26
 Glaucium 33
 Glauz 280
 Glechoma 329
 Gleditsia 150
 Gliricidia 166
 Globba 346
 Globularia 322
GLOBULARIACEAE 322
 Glottiphyllum* 67
 Gloriosa 366
 Gloxinia 317
 Glyceria 439, 440, 445
 Glycine 170
 Glycyrrhiza 163
 Glyptopleura 250
 Gnaphalium 259
GNETACEAE 7
 Gnetum 7
 Godetia 86
 Goldbachia 45
 Gomphocarpus 230
 Gomphrena 78
 Gonatanthus 375
 Gongora 408
 Goniolimon 282
 Goodenia 290
GOODENIACEAE 290
 Goodyera 404
 Gossypoides 125
 Gossypium 117, 125
 Gouinia 434
 Gourliea 170
 Grabowskia 303
GRAMINEAE 417
 Grangea 257
 Graptopetalum 56
 Gratiola 313
 Grevillea* 91
 Grewia 119
 Grindelia 256
 Griselinia 203
 Gronovia 36
GROSSULARIACEAE 133

Guaiacum 82
 Guazuma 119
 Gueldenstaedtia 163
 Guettarda 239
 Guizotia 254
 Gunnera 89
 Gutierrezia 258
 GUTTIFERAE 115
 Guyonia 113
 Gymnadenia 408
 Gymnaster 257
 Gymnocalycium 103
 Gymnocladus 150
 Gymnopetalum 99
 Gymnosteris 290
 Gynandropsis 37
 Gynesium 457
 Gynura 263
 Gypsophila 63

 Habenaria 405, 409
 Hablitzia 76
 Habranthus 377
 Hacquetia 208
 Haemanthus 380
 Haematoxylon 149
 HAEMODORACEAE 403
 Hakea 91
 Hakonechloa 457
 Halenia 276
 Halesia 225
 Halimicistus 97
 Halimione 77
 Halimium 96
 Halimodendron 163
 Halliophytum 130
 Halophila 335
 HALORAGACEAE 89
 HAMAMELIDACEAE 177
 Hamamelis 177
 Hamatocactus* 103
 Hamelia 239
 Hammarbya 405
 Hardenbergia 171
 Hasseanthus 56
 Haworthia* 363
 Haynaldia 450
 Hebe* 311
 Hebenstreitia 309, 322
 Hebestigma 165
 Hechtia 343
 Hedera 204
 Hedychium 346
 Hedypnois 246
 Hedyssarum 157
 Helenium 265
 Heleochloa 430

Helianthemum* 96
 Helianthus 255
 Helichrysum 259
 Heliconia 345
 Helicophyllum 375
 Helictotrichon 448
 Heliocereus 103
 Heliophila 48
 Heliopsis 253
 Heliosperma 62
 Heliotropium 296
 Helipterum 260
 Helixyra 388
 Helleborus* 21
 Helonias 370
 Heloniopsis 370
 Helosciadium 206
 Helosis 190
 Helwingia 203
 Hemarthria 421
 Hemerocallis* 382
 Hemizonia 251
 Heracleum 211
 Hereroa* 69
 Herminium 408
 Hermodactylus 388
 Herniaria 75
 Herrania 119
 Herreria 371
 Hesperaloe 394
 Hesperis 45
 Hesperocallis 382
 Hesperochiron 293
 Hesperoyucca 394
 Heteranthera 372
 Heteropappus 258
 Heterophragma 319
 Heteropogon 420
 Heterosmilax 373
 Heterospathe 397
 Heterospermum 254
 Heterotheca 257
 Heterotropa* 29
 Heuchera 56
 Hevea 129
 Hewittia 308
 Heylandia 167
 Hibbertia 95
 Hibiscadelphus 124
 Hibiscus 123
 Hidalgo 254
 Hieracium 250
 Hierochloë 439
 Hilaria 432
 Himantoglossum 404
 Hippeastrum 380
 Hippocrepis 156
 Hippomarathrum 210

Hippophae 191
 Hippuris 88
 Hirschfeldia 45
 Hoffmannia 239
 Hoffmanseggia 149
 Holcus 447
 Holocarpha 251
 Holoptelea 182
 Holosteum 61
 Holozonia 252
 Homalanthus 129
 Homalocephala 103
 Homeria 389
 Homogyne 264
 Homoglossum 390
 Homoranthus* 110
 Honkenya 119
 Honkenya 62
 Hopea 110
 Hordelymus 451
 Hordeopyrum 453
 Hordeum 451
 Horminum 325
 Hornungia 37
 Hosta 395
 Hottonia 280
 Houstonia 235
 Houttuynia 30
 Hovenia 191
 Howea 398
 Hoya 230
 Hugelia 290
 Humulus 185
 Hunnemannia 34
 Hutchinsia 37
 Hyacinthus 351, 353
 Hybanthus 50
 Hydnocarpus 95
 Hydnophytum 239
 Hydrangea* 134
 HYDRANGEACEAE 133
 Hydrastis 26
 Hydrilla 335
 Hydrocera 86
 Hydrocharis 333, 335
 HYDROCHARITACEAE 335
 Hydrochloa 455
 Hydrocleis 335
 Hydrocotyle 209
 Hydrolea 294
 HYDROPHYLLACEAE 292
 Hydrophyllum* 293
 Hygrophila 321
 Hygroryza 455
 Hylocereus* 103
 Hylomecon 33

Hymenaea 149
 Hymenocallis 382
 Hymenocarpus 159
 Hymenocyclus* 69
 Hymenodictyon 237
 Hymenogyne 67
 Hymenophysa 44
 Hymenoxys* 265
 Hyophorbe 397
 Hyoscyamus 307
 Hyoseris* 249
 Hyparrhenia 418
 Hypecoum 33
 HYPERICACEAE 114
 Hypericum 114
 Hyphaene 398
 Hypochaeris* (Hypo-
 choeris) 246
 HYPOXIDACEAE 403
 Hypoxis 403
 Hyssopus 325
 Hystrix 453

Iberis* 38
 Ibervillea 100
 Ibicella 321
 Icacorea 225
 Idesia 95
 Ilex 189
 ILLECEBRACEAE 74
 Illecebrum 74
 Illicium 14
 Ilysanthes 315
 Imitaria 67
 Impatiens* 85
 Imperata 421
 Incarvillea 318
 Indigofera 162
 Indocalamus 457
 Inocarpus 173
 Intsia 149
 Inula 258
 Iodina 190
 Ionidium 50
 Ionopsidium 39
 Ipheion 355
 Ipomoea* 308
 IRIDACEAE 383
 Iris* 384, 388
 Isachne 427
 Isatis 38
 Ischaemum 421
 Iseilema 422
 Isolepis 415
 Isomeris 37
 Isopogon 91
 Isopyrum 21

Isotoma 289
 Itea 133
 Ixeris* 247
 Ixia 388
 Ixiolirion 378
 Ixora 237

 Jaborosa 303
 Jacaranda 318
 Jacobinia* 321
 Jamesia 134
 Japonolirion 370
 Jasione 287
 Jasminum 226
 Jatropha 130
 Jeffersonia 28
 Jubaea 397
 JUGLANDACEAE 199
 Juglans 199
 JUNCACEAE 413
 JUNCAGINACEAE 336
 Juncus 413
 Junellia 322
 Juniperus 7
 Jurinea 262
 Jussieua 88
 Justicia 321, 322

Kadsura 14
 Kaempferia 346
 Kalanchoe* 55
 Kalimeris 258
 Kalmia 215
 Kalopanax 204
 Kennedya 171
 Kentia 396
 Kentranthus 243
 Kerneria 40
 Kerria 142
 Keteleeria 5
 Kickxia 314
 Kigelia 320
 Kirengeshoma 58
 Kitaibelia 124
 Kitchingia 55
 Kleinia 263
 Knautia 245
 Kniphofia 362
 Knowltonia 26
 Kobresia 416
 Kochia 76
 Koeleria 448
 Koelpinia 251
 Koelreuteria 197
 Koenigia 71
 Kohlrauschia 63

Kokia 125
 Kolkwitzia 240
 Komaroffia 19
 Korolkowia 359
 Kosteletzkya 126
 Krigia 247
 Kumlienla 21
 Kummerowia 158
 Kundmannia 206
 Kunzea 111
 Kyllinga 416

LABIATAE 324
 Laburnum 169
 Lachenalia 353
 Lactuca* 247, 249, 250
 Laelia 408
 Laeliocattleya 408
 Lagarosiphon 335
 Lagenaria 99
 Lagerstroemia 86
 Lagoecia 208
 Lagophylla 252
 Lagotis 315
 Lagurus 436
 Lambertia 90
 Lamarckia 440
 Lamium 329
 Lantana 324
 Lapeidra 381
 Lapeyrousia 388
 Lappula 297
 Lapsana 247
 LARDIZABALACEAE 28
 Larix 5
 Larrea 82
 Laserpitium 210
 Lasiacis 426
 Lasiospermum 267
 Latania 397
 Lathraea 317
 Lathyrus 155
 Launaea 248
 LAURACEAE 15
 Laurus 16
 Lavandula 326
 Lavatera 123
 Laxmannia 368
 Layia 252
 Leavenworthia 44
 Lecanophora 121
 LECYTHIDACEAE 113
 Ledum 216
 Leersia 456
 Leiophyllum 216
 Leiphaimos 276
 Leipoldtia* 70

Lemnaceae* 103
 Lemmonia 293
 Lemna 377
 LEMNACEAE 377
 Lens 155
 LENTIBULARIACEAE 317
 Leontodon 246
 Leontopodium 260
 Leonurus 329
 Lepidium* 39
 Leptactinia 237
 Leptaloë 362
 Leptochiton 378
 Leptochloa 429
 Leptocoryphium 427
 Leptodermis 238
 Leptoloma 426
 Leptospermum* 112
 Leptosyne 254
 Lepturus 435
 Lespedeza 157
 Lesquerella 39
 Leucadendron 91
 Leucaena 153
 Leucocrinum 382
 Leucojum 378
 Leucopogon* 220
 Leucorchis 409
 Leucospermum* 91
 Leucothoe 216
 Leuzea 261
 Levisticum 211
 Liatris* 269
 Libocedrus 6
 Licuala 396
 Ligularia 264
 Ligusticum 206
 Ligustrum 228
 LILIACEAE 351
 Lilium 359
 LIMNANTHACEAE 84
 Limnathemum 276
 Limnanthes* 84
 Limnocharis 335
 Limnnodea 436
 Limnophyton 336
 Limodorum 405
 Limonium 282
 Limosella 314
 LINACEAE 81
 Linanthus 291
 Linaria* 309, 313, 314
 Linderia 16
 Lindmannia 344
 Linnaea 240
 Linum* 81
 Linosyris 257

Liparis 405
 Lipocarpa 416
 Lippia 323
 Liquidambar 177
 Liriodendron 13
 Liriope 370
 Lissanthe 220
 Listera 406
 Litchi 197
 Lithodroma 40
 Lithops* 67
 Lithospermum 295
 Littonia 366
 Littorella 283
 Livistonia 398
 Lloydia 362
 Loasa 35, 36
 LOASACEAE 35
 Lobelia* 290
 LOBELIACEAE 289
 Lobostemum* 296
 Lobularia 42
 Lochnera 229
 LOGANIACEAE 225
 Loiseleuria 216
 Lolium 440
 Lomatia 91
 Lomatogonium 275
 Lomatophyllum 362
 Lonas 267
 Lonchocarpus 173
 Loniceria 241
 Lopezia 88
 Lophocereus 103
 Lophophora 103
 Lophosciadium 211
 LORANTHACEAE 189
 Loranthus 190
 Lotus 159
 Loudetia 429
 Luculia 239
 Luffa 100
 Luisia 408
 Lunaria 44
 Lupinus 167
 Luzula* 413
 Lychnis 62, 63
 Lycium 303
 Lycopersicum 303
 Lycopsis 297
 Lycopodium 329
 Lycoris 378
 Lycurus 431
 Lygeum 435
 Lygistum 235
 Lygodesmia 247
 Lyonina 216
 Lysidice 148

Lysiloma 151
 Lysimachia 280
 Lysinema 221
 LYTHRACEAE 86
 Lythrum 86
 Macadamia 90
 Machairophylloides 67
 Macleaya 34
 Macrocarpium 203
 Macrochordium 343
 Macrophyra 236
 Macrozamia 3
 Maddenia 142
 Madhuca 225
 Madia 251
 Maerua 36
 Magnolia 13
 MAGNOLIACEAE 13
 Mahonia 28
 Maianthemum 367
 Malachra 122
 Malacothrix* 248
 Malaxis 405
 Malcolmia 45
 Mallotopus 264
 Mallotus 129
 Malope 124
 MALPIGHIACEAE 126
 Malus 146
 Malva 122
 MALVACEAE 120
 Malvastrum* 124
 Malvaviscus 122
 Mammillaria* 104
 Manettia 235
 Manfreda 394
 Mangifera 199
 Manglietia 13
 Manihot 129
 Manisuris 422
 Maranta 347
 MARANTACEAE 347
 Margaranthus 304
 Margotia 210
 Marica 384
 Markhamia 320
 Marlea 203
 Marrubium 329
 Martinezia 398
 Martynia 321
 Mascarenhasia 230
 Matricaria 263
 Matthiola 41
 Maurandia 314
 Maximowiczia 100
 Maytenus 189
 Meconopsis 34

Medeola 372
 Medicago 160
 Medicago 105
 Melaleuca* 112
 Melampyrum* 316
 Melandrium* 51, 62
 Melastoma 113
 MELASTOMACEAE 113
 Melia 197
 MELIACEAE 197
 Melica* 439, 446
 Melichrus 220
 Melicocca 197
 Melilotus 161
 Melinis 426
 Meliosoma 198
 Melissa 328
 Melothria 99
 Memecylon 113
 MENISPERMACEAE 29
 Menispermum 29
 Menodora 226
 Menonvillea 48
 Mentha 325
 Mentzelia 36
 Menyanthes 276
 Mercurialis 128
 Merendera 368
 Mericarpaea 237
 Merremia 308
 Mertensia 295
 Mesembryanthemum* 70
 Mespilus 145
 Mesua 115
 Metanartheicum 370
 Metasequoia 5
 Meum 207
 Meyerophytum 67
 Mibora 436
 Michauxia 289
 Michelia 13
 Micrampelis 98
 Microchloa 434
 Microcitrus 193
 Microcycas 3
 Microlaena 456
 Micromyrtus 112
 Micropterum 70
 Microseris* 251
 Microstegium 421
 Miersia 381
 Mikania 270
 Miliun 453
 Milla 357
 Millettia 164
 Millingtonia 318
 Miltitzia 294
 Mimetes 91

Mimosa 153
 MIMOSACEAE 150
 Mimulus 310
 Mina 308
 Minuartia 62
 Mirabilis 90
 Miscanthus 422
 Mitchellia 237
 Mitrastemon 29
 Mitriostigma 237
 Mitrophora 244
 Mitrophyllum* 67
 Modiola 124
 Modiolastrum 120
 Moehringia 62
 Moenchia 61
 Molinia 446
 Moliniopsis 446
 MOLLUGINACEAE 65
 Mollugo 65
 Molospermum 208
 Moltkia 297
 Momordica 99
 Monarda 326
 Mondo 370
 Monerma 435
 Moneses 216
 Monochoria 372
 Monocymbium 419
 Monolepis 76
 Monotagma 347
 Monotoca 220
 Monotropa 221
 MONOTROPACEAE 221
 Monsonia 84
 Monstera 374
 Montia 71
 Monvillea 103
 MORACEAE 183
 Moraea 389
 Moricandia 46
 Morina 245
 Morinda 237
 Moringa 37
 MORINGACEAE 37
 Morisia 45
 Morus 184
 Mosla 329
 Mucizonia 54
 Mucuna 171
 Muehlenbeckia 73
 Muehlenbergia 430
 Muiria 67
 Mundulea 165
 Munroa 446
 Murraya 193
 Musa 344
 MUSACEAE 344

Musanga 184
 Muscari 354
 Mussaenda* 238
 Mutisia 270
 Myagrum 44
 Mycelis 250
 Myosotis 295
 Myosoton 62
 Myosurus 26
 Myrica 179
 MYRICACEAE 179
 Myricaria 97
 Myriophyllum 89
 Myristica 16
 MYRISTICACEAE 16
 Myrmecodia 239
 Myroxylon 170
 Myrrhis 208
 MYRSINACEAE 225
 MYRTACEAE 110
 Myrtillocactus 104
 Myrtus 112

Naegelia 317
 NAIADACEAE 338
 Naia 338
 Nama* 293
 Nananthera 267
 Nananthus* 67
 Nandina 28
 Napaea 121
 Narcissus 379
 Nardus 435
 Narenga 421
 Narthecium 370
 Nasella 455
 Nasturtium 43
 Naumbergia 280
 Nelumbium 26
 Nelumbo 26
 Nemesia* 314
 Nemophila* 293
 Neodonnellia 339
 Neomammillaria 104
 Neomarica 384
 Neosparton 323
 Neostapfia 446
 Neottia 406
 Nepa 167
 Nepeta 329
 Nephelium 197
 Nephrosperma 397
 Neptunia 153
 Nerine 382
 Nerium 230
 Nertera 239
 Nesaea 86
 Neslia 44

Neurada 138
 Neurotheca 276
 Nicandra 301
 Nicodemia 226
 Nicolaja 346
 Nicotiana 301
 Nidularium* 343
 Nierembergia 301
 Nigella 19
 Nigritella 408
 Nipa 396
 Nitrophila 76
 Nolana 307
 NOLANACEAE 307
 Nolina 393
 Nomocharis 359
 Nonnea (Nonea) 297
 Nopalxochia 104
 Notholirion 359
 Nothopanax 204
 Nothoscordum 357
 Nothosmyrnium 210
 Notocactus 105
 Notonia 263
 Notospartium 164
 Nototriche 120
 Nuphar 27
 Nuttallia 142
 NYCTAGINACEAE 90
 Nycterinia 309
 Nyctocereus 104
 Nymphaea 27
 NYMPHAEACEAE 26
 Nymphoides 276
 Nyssa 204
 NYSSACEAE 203

 Oakesia 366
 Oakesiella 366
 Obione 77
 Ochlandra 458
 Ochna 109
 OCHNACEAE 109
 Ochrocarpus 115
 Ocimum 328
 Odontadena 230
 Odontites 316
 Odontophorus 68
 Odontospermum 258
 Odontostomum 371
 Oenanthe 207
 Oenothera* 87
 OENOTHERACEAE 86
 Ofaiston 77
 Oldenlandia 235
 Olea 228
 OLEACEAE 226

Omphalodes 295
 Omphalogramma 280
 ONAGRACEAE 86
 Oncidium 404
 Oncosperma 397
 Onobrychis 157
 Ononis 162
 Onopordum 262
 Onosma 296
 Onuris 41
 Operculina 308
 Ophiopogon 370
 Ophiorrhiza 237
 Ophrys 406
 Oplismenopsis 427
 Oplismenus 426
 Opopanax 211
 Opuntia* 102
 Orbigny 397
 ORCHIDACEAE 403
 Orchis 406
 Orcuttia 447
 Oreodoxa 399
 Origanum 328
 Orlaya 208
 Ormocarpum 158
 Ormosia 169
 Ornithidium 409
 Ornithogalum 351
 Ornithopus 157
 OROBANCHACEAE 316
 Orobanche 316
 Orontium 374
 Orostachys* 54
 Oroxylum 318
 Orychophragmus 47
 Oryza 456
 Oryzopsis 455
 Osbeckia 113
 Oscularia 68
 Osmanthus 228
 Osmarea 228
 Osmaronia 142
 Osmorhiza 208
 Osteomeles 145
 Ostrya 181
 Osyris 190
 Otanthus 267
 Othonna 263
 Ottelia 335
 OXALIDACEAE 84
 Oxalis* 84
 Oxybaphus 90
 Oxychloë 413
 Oxyccoccus 219
 Oxydendron 216
 Oxyria 71
 Oxytropis 164

Pachylarnax 13
 Pachyrrhizus 171
 Pachystima 189
 Paeonia 19
 Pajanelia 320
 Palaquium 225
 Palisota 340
 Paliurus 191
 PALMAE 396
 Pamianthe 383
 Panax 204
 Pancheria 133
 Pancratium 381
 PANDANACEAE 399
 Pandanus 399
 Pandorea 319
 Panicum* 423, 425, 426
 Papaver* 33
 PAPAVERACEAE 33
 Paphiopedilum* 404
 PAPILIONACEAE 153
 Pappophorum 434
 Paracaryum 295
 Paradisea 366
 Parahebe 312
 Paranomus 91
 Parapholis 435
 Parietaria 185
 Paris 371
 Parkia 151
 Parkinsonia 150
 Parmentiera 320
 Parnassia 58
 Parochetus 162
 Paronychia 75
 Parrotia 177
 Parthenium 253
 Parthenocissus 192
 Paspalidium 426
 Paspalum* 427
 Passiflora 97
 PASSIFLORACEAE 97
 Pastinaca 211
 Patrinia 244
 Paulownia 314
 Pavetta* 238
 Pavonia 122
 Pecteilis 409
 PEDALIACEAE 320
 Pedalium 320
 Pedicularis* 315
 Pedilanthus 129
 Peganium 82
 Pelargonium* 82
 Peliosanthus 371
 Peltandra 376
 Peltaria 44
 Peltiphyllum 59

Peltophorum 150
Penicillaria 423
Pennisetum 423
Penstemon (**Pentstemon**)*
 313
Pentacme 109
Pentactina 144
Pentaglossa 297
Pentapterygium 219
Pentas 235
Pentastichis 449
Penthorum 57
Peperomia 30
Peplis 86
Perdicium 270
Pereskia 101
Periballia 447
Perilla 330
Periploca 231
Pernettya 215
Perotis 432
Persea* 16
Persoonia* 90
Petagnia 207
Petasites 264
Petiveria 75
Petrocallis 38
Petrocoptis 62
Petrophila 91
Petroselinum 205
Petunia 301
Peucedanum 206, 211
Phaca 163
Phacelia* 292
Phacellanthus 317
Phaedranassa 383
Phaedranthus 320
Phaenosperma 455
Phaeomeria 346
Phaeopappus 261
Phalacroseris 250
Phalaenopsis* 408
Phalaris 438
Pharbitis 308
Phaseolus 172
Phebalium* 195
Phellosperma 104
Philadelphus* 133
Philibertia 230
Phillyrea 228
Philodendron 376
Philothea 195
Phippia 438
Phleum 436
Phlomis 325
Phlox 290
Phoenix 398
Pholistoma 293

Pholiurus 435
Phormium 393
Photinia 146
Phragmites 457
Phryganocydia 320
Phrygilanthus 189
Phryma 323
Phuopsis 235
Phyla 324
Phyllanthus 130
Phyllarthron 320
Phyllis 237
Phyllocarpus 149
Phyllodoce 216
Phyllospadix 337
Phyllostachys 457
Physalis* 304
Physaria 37
Physocarpus 144
Phyteuma 287
Phytolacca 75
PHYTOLACCACEAE 75
Picea 6
Picrasma 196
Picridium 249
Picris 247
Pieris 216
Pilea 185
Pileanthus 110
Pimelea 90
Pimenta 112
Pimpinella 205
PINACEAE 5
Pinanga 396
Pinaropappus 251
Pinellia 375
Pinguicula 317
Pinus* 6
Piper 30
PIPERACEAE 30
Piptadenia 151
Piptanthus 166
Piptochaetium* 455
Pirola 218
Piscidia 173
Pistacia 198
Pistia 375
Pisum 155
Pitcairnia* 344
Pithecellobium 152
Pithecolobium 152
PITTOSPORACEAE 95
Pittosporum 95
PLANTAGINACEAE 282
Plantago* 282
PLATANACEAE 177
Platanthera 409
Platanus 177

Platimiscium 173
Platyclinis 408
Platycodon 287
Platystemon 33
Plazia 271
Plectranthus 325
Plectronia 239
Pleioblastus 457
Pleione 403
Pleiospilos* 68
Pleuropogon 446
Pleuropteris 74
Plocoglottis 407
Pluchea 258
Plumbagella 281
PLUMBAGINACEAE 281
Plumbago 281
Plumeria 229
Poa* 444
Podalyria 166
Podanthum 287
PODOCARPACEAE 4
Podocarpus 4
Podophyllum 28
PODOSTEMONACEAE
 59
Poellnitzia 362
Pogonarthria 430
Pogonatherum 419
Poinciana 150
Polanisia 37
POLEMONIACEAE 290
Polemonium* 292
Pollia 338
Polyalthia 15
Polyanthes (**Polianthes**) 395
Polycarpon 60
Polycodium 219
Polygala 50
POLYGALACEAE 50
POLYGONACEAE 71
Polygonatum 367
Polygonum* 73, 74
Polypogon 437
Polypremum 226
Polytoca 417
Poncirus 194
Pongamia 173
Pontederia 372
PONTEDERIACEAE 372
Populus* 177
Portlandia 237
Portulaca 70
PORTULACACEAE 70
Posoqueria 210
Potamogeten* 337
POTAMOGETONACEAE
 337

Potamophila 455
 Potentilla* 138, 139
 Poterium 141
 Pothos 374
 Prenanthes* 249
 Prenia 68
 Preussiella 113
 Primula* 273, 277
 PRIMULACEAE 276
 Pringlea 48
 Prinsepia 142
 Prismatocarpus 289
 Pritchardia 398
 Priva 323
 Proboscidea 321
 Prosopis 153
 Prostanthera 330
 Protea* 91
 PROTEACEAE 90
 Proustia 271
 Prunella 328
 Prunus 142
 Psamma 436
 Pseudananas 343
 Pseudobaccharis 257
 Pseudobromus 446
 Pseudocalymma 319
 Pseudolarix 5
 Pseudosasa 458
 Pseudotsuga 6
 Psidium 113
 Psilocaulon 68
 Psilurus 435
 Psittacanthus 190
 Psoralea 165
 Psychotria 238
 Pteridophyllum 34
 Pterocactus 102
 Pterocarpus 173
 Pterocarya 199
 Pterocephalus 245
 Pterogyne 148
 Pterospermum 120
 Pterostegia 71
 Pterostyrax 225
 Ptychosperma 396
 Ptychotis 204
 Puccinellia 445
 Pueraria 172
 Pulicaria 258
 Pulmonaria* 296
 Pulsatilla 23
 Pultenaea 166
 Punica 86
 PUNICACEAE 86
 Puschkinia 349, 353
 Putoria 237
 Putranjiva 130

Puya 343
 Pycnostachys 329
 Pygmaea 312
 Pyracantha 145
 Pyrola 216, 218
 Pyrrhopappus 247
 Pyrularia 190
 Pyrus 144, 146, 147
 Pyxidanthra 221

 Quamoclit 308
 Quassia 196
 Quercus* 181
 Quillaja 145
 Quincula 303
 Quisqualis 114

 Radiola 82
 Raffanaldia 45
 RAFFLESACEAE 29
 Rafinesquia* 249
 Ramischia 218
 Ramonda 318
 Randia 237
 RANUNCULACEAE 19
 Ranunculus* 24
 Ranzania 28
 Raphano-Brassica 47
 Raphanus 47
 Raphia 397
 Raphiolepis 145
 Rapistrum 46
 Ravenala 345
 Reboudia 46
 Rehmannia 309
 Reichardia 249
 Reineckia 371
 Reinwardtia 82
 Reseda 50
 RESEDACEAE 50
 Reynoutria 74
 Rhagadiolus 246, 247
 RHAMNACEAE 190
 Rhamnus 190
 Rhapis 398
 Rheum 74
 Rhinanthus* 315
 Rhinephyllum 68
 Rhipsalis 104
 Rhizobotrya 40
 Rhododendron 217
 Rhodohypoxis 403
 Rhodotypos 142
 Rhoeo 338
 Rhus 199
 Rhynchelytrum 426
 Rhynchosia 171
 Rhynchosinapis 47

Rhynchospora 416
 Ribes* 133
 Richardia 239
 Richardsonia 239
 Richea* 221
 Ricinus 129
 Ricotia 44
 Ridolfia 207
 Rivina 75
 Robertia 246
 Robinia 165
 Rochea 54
 Rodgersia 58
 Roemeria 33
 Rohdea (Rhodea) 371
 Rollinia 15
 Romanzoffia 293
 Romneya 35
 Romulea 390
 Rondeletia 235
 Rorippa 43
 Rosa 134
 ROSACEAE 134
 Rosmarinus 325
 Rothia 166
 Rottboellia 422
 ROXBURGHACEAE 393
 Roystonea 399
 Rubia 238
 RUBIACEAE 235
 Rubus* 139
 Rudbeckia 253, 255
 Ruellia* 321, 322
 Rumex 71
 Runyonia 395
 Ruppia 337
 RUPPIACEAE 337
 Ruprechtia 71
 RUSCACEAE 373
 Ruschia* 70
 Ruscus 373
 Russelia 314
 Ruta 195
 RUTACEAE 193

 Sabal 398
 Sabia 198
 SABIACEAE 198
 Sabinea 163
 Saccharum 421
 Sacciolepis 426
 Saccopetalum 15
 Sageretia 191
 Sagina 60
 Sagittaria* 336
 Saintpaulia 317
 Sakersia 113
 SALICACEAE 177

Salicornia 77
 Salix* 178, 179
 Salpichroa 304
 Salpiglossis 303
 Salsola 77
 Salvia 326
 Sambucus 242
 Samolus 280
 Samuela 395
 Sanchesia 322
 Sanguisorba 141
 Sanicula* 209
 Sansevieria 394
 SANTALACEAE 190
 Santalum 190
 Santolina 267
 SAPINDACEAE 197
 Sapium 129
 Saponaria* 63
 SAPOTACEAE 225
 Saraca 149
 Saracha 306
 Saraanthus 406
 Sarcocaulon 84
 Sarcocephalus 239
 Sarcococca 177
 Sarothamnus 169
 Sarracenia* 59
 SARRACENIACEAE 59
 Sasa 458
 Sasaella 457
 Sasamorphia 458
 Sassafras 16
 Satureia 325
 Sauromatum 376
 SAURURACEAE 30
 Saururus 30
 Saussurea 261
 Saxifraga* 57, 58, 59
 SAXIFRAGACEAE 56
 Scabiosa* 244, 245
 Scaevola 290
 Scandix* 208
 Schedonardus 434
 Scheuchzeria 336
 SCHEUCHZERIACEAE 336
 Schinus 199
 Schisandra 14
 SCHISANDRACEAE 14
 Schismus 447
 Schivereckia 40
 Schizachne 439
 Schizachyrium 419
 Schizanthus 302
 Schizocodon 221
 Schizopetalon 48
 Schizophragma 134

Schkuhria 265
 Schlumbergera 104
 Schoenocaulon 369
 Schoenoplectus 416
 Schoenus 416
 Schrankia 151
 Schwantesia 68
 Sciadopitys 4
 Sciaphylla 336
 Scilla 352, 353
 Scindapsus 376
 Scirpus 415, 416
 Sclerachne 417
 Scleranthus 75
 Scleria 416
 Sclerochloa 441
 Scleropoa 441
 Sclerostachya 422
 Scoliopus 372
 Scolochloa 446
 Scolymus 251
 Scoparia 314
 Scopolia 304
 Scorpiurus 156
 Scorzonera* 248
 Scrophularia 314
 SCROPHULARIACEAE 309
 Scurrula 190
 Scutellaria* 328
 Sebastiana 128
 Secale 450
 Secchium 100
 Securigera 158
 Sedella* 54
 Sedum* 53, 54
 Sehima 422
 SELAGINACEAE 322
 Selenicereus* 104
 Selinum 207
 Selliera 290
 Semecarpus 199
 Semiarundinaria 458
 Sempervivum 55
 Senecio* 262
 Sequoia 5
 Sequoiadendron 5
 Seraphias 406
 Serissa 237
 Serratula 261
 Serruria 91
 Sesamum 321
 Sesbania 162
 Seseli* 205
 Sesleria 445
 Sesuvium 66
 Setaria 425
 Setcreasea 338

Shantzia 126
 Shepherdia 191
 Sherardia 237
 Shortia 221
 Sibbaldia 139
 Sibiraea 144
 Sicyos 100
 Sida 122
 Sidalcea 124
 Sideritis 330
 Siderocarpus 151
 Sieglingia 411, 449
 Silaum 201, 207
 Silene* 63
 Siler 210
 Silybum 262
 SIMARUBACEAE 196
 Simethis 365
 Sinapis 45, 47
 Sinninga 317
 Sinobambusa 458
 Sinodora 148
 Sinowilsonia 177
 Sisymbrella 43
 Sisymbrium 41
 Sisyrinchium 388
 Sitanion 453
 Sium 206
 SMILACACEAE 372
 Smilacina 367
 Smilax 372
 Smyrniun 210
 SOLANACEAE 301
 Solandra 304
 Solanum* 303, 304
 Soldanella 280
 Solidago 258
 Sonchus* 248, 250
 Sonerila 113
 Sophora 170
 Sopubia 316
 Sorbaronia 147
 Sorbus 147
 Sorghastrum 419
 Sorghum 418
 Sparaxis 384
 SPARGANIACEAE 377
 Sparganium* 377
 Spartina 432
 Spartium 169
 Spathodea 318
 Specularia 287
 Spergula 60
 Spergularia 60
 Spermacoce 240
 Sphaeralcea* 120
 Sphalmanthus 68
 Sphenogyne 265

Sphenopholis 447
 Sphenopus 440
 Sphenotoma 220
 Sphinctospermum 163
 Spigelia 226
 Spilanthes 254
 Spinacia 75
 Spinifex 425
 Spiraea 144
 Spiranthes 403
 Spirodela 377
 Spironema 338
 Spondias 199
 Sporobolus 431
 Sprekelia 383
 Sprengelia 221
 Stachys 324
 Stachytarpheta 324
 Stackhousia 189
STACKHOUSIACEAE 189
 Stangeria 3
 Stanhopea 409
 Stanleya* 48
 Stapelia* 231
 Staphylea 198
STAPHYLEACEAE 198
 Stauracanthus 167
 Stelis 405
 Stellaria* 61, 62
 Stemodia 309
 Stemona 393
 Stenanthium 369
 Stenocarpus 91
 Stenolobium 320
 Stenopetalum 39
 Stenotaphrum 426
 Stephanomeria* 249
 Stephanotis 231
 Sterculia 120
STERCULIACEAE 119
 Stereospermum 320
 Sternbergia 382
 Stevensonia 397
 Stevia 261
 Stictocardia 308
 Stigmaphyllon 126
 Stillingia 129
 Stipa* 454
 Stiporyzopsis 455
 Stizolobium 171
 Stomatium* 68
 Stranvaesia 145
 Stratiotes 335
 Strelitzia 345
STRELITZIACEAE 345
 Streptanthus 48
 Streptocarpus* 317

Streptopus 366
 Striga 316
 Stromanthe 347
 Strophanthus* 229
 Struthanthus 189
 Strychnos 226
STYLIDIACEAE 290
 Stylidium 290
 Stylophorum 33
 Stylosanthes 158
 Stypantra 368
 Styphelia* 219
STYRACACEAE 225
 Styrax 225
 Suaeda 77
 Succisa 245
 Succowia 46
 Swainsona 164
 Sweetia 169
 Swertia 276
 Swietenia 197
 Symphoricarpos 242
 Symphyandra 289
 Symphyonema 91
 Symphytum 297
 Symplocarpus 376
 Syncarpia 112
 Synthesis 315
 Syringa 228
 Tabebuia 320
 Tabernaemontana 230
 Tacca 403
TACCACEAE 403
 Tacsonia 97
 Tagetes 265
 Tainia 406
 Taiwania 5
 Talauma 13
 Talinum 71
TAMARICACEAE 97
 Tamarindus 149
 Tamarix* 97
 Tamus 393
 Tanacetum 267
 Tanaecium 320
 Tapeinanthus 380
 Tarasa 120
 Taraxacum* 249
 Taraxia 87
 Tauscheria 44
TAXACEAE 3
TAXODIACEAE 4
 Taxodium 5
 Taxus 4
 Tecoma 318, 319, 320
 Tecomaria 318
 Tecophilaea 371

TECOPHILAEACEAE 371
 Teesdalia 39
 Telekia 258
 Tellima 56
 Teleopa 91
 Tenagocharis 335
 Tephrosia* 166
 Terminalia 114
 Ternstroemia 109
TERNSTROEMIACEAE 109
 Tessaria 258
 Tetracentron 14
 Tetrachne 429
 Tetragonia 66
 Tetragonocalamus 458
 Tetragonolobus 159
 Tetranema 314
 Tetrapanax 204
 Tetrastigma 192
 Teucrium 324
 Thalia 347
 Thalictrum* 21
 Thapsia 210
 Thea 109
THEACEAE 109
 Thelesperma 253
 Thelocactus 104
THELYGONACEAE 75
 Thelygonum 75
 Thelymitra 404
 Themeda 420
 Theobroma 119
 Thermopsis 166
 Thesium 190
 Thespesia 126
 Thevetia 229
 Thladiantha 99
 Thlaspi* 38
 Thomasia 120
 Thonningia 190
 Thrinax 398, 399
 Thryptomene 112
 Thuja 6
 Thunbergia 321
THYMELAEACEAE 89
 Thymophylla 265
 Thymus 325
 Thysanocarpus 44
 Thysanotus 366
 Tiarella 57
 Tigridia 389
 Tilia 119
TILIACEAE 119
 Tillaea 54
 Tillandsia 343
 Tinantia 340
 Tinospora 29

Tipuana 173
 Titanopsis 68
 Tithonia 255
 Toisusu 179
 Tolfieldia 370
 Tolmiea 56
 Tolpis* 250
 Tordylium 211
 Torenia 313
 Torilis 207
 Torreya 3
 Torreyochloa 440
 Tovara 74
 Tozzia 316
 Trachelium 289
 Trachelospermum 229
 Trachycarpus 399
 Trachylobium 148
 Trachymene 209
 Trachypogon 419
 Tradescantia 338
 Tragopogon* 248
 Tragus 432
 Trapa 88
 Traunsteinera 409
 Trautvetteria 26
 Treleasea 338
 Trewia 130
 Trianthema 65
 Tribulus 82
 Trichachne 425
 Trichloris 434
 Trichocereus 105
 Trichocline 270
 Trichodiadema 70
 Tricholaena 426
 Trichoneura 433
 Trichophorum 416
 Trichosanthus 99
 Trichostema 328
 Tricyrtis* 370
 Tridax 264
 Tridens 429
 Trientalis 281
 Trifolium 159
 Triglochin 336
 Trigonella 161
 TRILLIACEAE 371
 Trillium 371
 Trinia 205
 Triodia* 429
 Triphasia 194
 Triplaris 74
 Tripogandra 339
 Tripsacum 417
 Triraphis 429
 Trisetum 448
 Tristachya 429

Tristania 112
 Tristemma 113
 Tritoleia 355
 Trithrinax 399
 Triticale 453
 Triticum 451
 Tritonia 388
 Triumfetta 119
 TRIURIDACEAE 336
 Trochisanthes 207
 Trochocarpa 220
 TROCHODENDRACEAE
 14
 Trochodendron 14
 Trollius 21
 TROPAEOLACEAE 85
 Tropaeolum 85
 Tsuga 5
 Tuberaria 96
 Tulbaghia 362
 Tulipa* 360, 361
 Tunica 63
 Turricula 294
 Turritis 44
 Tussilago 264
 Typha 377
 TYPHACEAE 377
 Typhalaea 122
 Typhonium 374

Ulex 167
 Ullucus 78
 ULMACEAE 182
 Ulmus 182, 183
 UMBELLIFERAE 204
 Umbellularia 16
 Umbilicus* 54
 Ungernia 378
 Uniola 457
 Urachne 455
 Uragoga 237
 Urena 121
 Urginea 353
 Urochloa 424
 Ursinia 265
 Urtica 185
 URTICACEAE 185
 Utricularia 317
 Uvularia 366

Vaccaria 63
 VACCINIACEAE 218
 Vaccinium 219
 Vahlia 56
 Vaillantia 235
 Valeriana 243
 VALERIANACEAE 243
 Valerianella* 243

Valleria 229
 Vallisneria 335
 Vallota 380
 Vancouveria 28
 Vanda 403
 Vandelia 310
 Vangueria 239
 Vanheerdtia* 70
 Vanilla 405
 Vanzijlia* 70
 Vaseyochloa 446
 Velezia 63
 Velleia 290
 Veltheimia 354
 Venidium 265
 Venterata 447
 Veratrum 369
 Verbascum 315
 Verbena* 322
 VERBENACEAE 322
 Verbesina 255
 Vernonia 269
 Veronica* 310, 311, 312
 Verticordia* 110
 Vesicaria 42
 Vervetia 419
 Viburnum 240
 Vicia 131, 154
 Victoria 27
 Vigna 170
 Vinca 230
 Vincetoxicum 231
 Viola* 49
 VIOLACEAE 49
 Viscaria 63
 Viscum 190
 VITACEAE 192
 Vitex 323
 Vitis 192
 Voandzeia 171
 Vogelia 44
 Voyria 276
 Vulpia 443

Wahlenbergia 287, 289
 Waldsteinia 141
 Warburgia 237
 Washingtonia 396
 Watsonia 388
 Weddellia 59
 Weigelia 241
 Waldenia 338
 Welwitschia 1, 7
 WELWITSCHIACEAE 7
 Werckleocereus 104
 Wigandia 294
 Wikstroemia 89
 Wilcoxia 104

Willemetia 247
 WINTERACEAE 14
 Wissadula 121
 Wistaria 164
 Withania 304, 306
 Wolffia 377
 Woollsia 221
 Wormia 95
 Wyethia 255

Xanthium* 253
 Xanthorrhoea 393
 XANTHORRHOACEAE
 393
 Xanthosoma 374
 Xanthoxylum 196
 Xeranthemum 260
 Xerodraba 40, 41
 Xylomelum 90

Youngia* 247
 Yucca* 394, 395
 Zalacca 396
 Zaluzianskia 309
 Zamia 3
 Zamioculcas 376
 Zannichellia 337
 ZANNICHELLIACEAE
 337
 Zantedeschia 376
 Zanthorrhiza 26
 Zanthoxylum 196
 Zauschneria 88
 Zea 417
 Zebrina 338
 Zelkova 183
 Zephyranthes 377

Zeuxine 409
 Zieria 196
 Zingiber 345
 ZINGIBERACEAE 345
 Zinnia 254
 Zizania 456
 Zizaniopsis 456
 Zizyphus 191
 Zornia 158
 Zostera* 337
 ZOSTERACEAE 337
 Zoysia 432
 Zyadenus 369
 Zygocactus 104
 Zygopetalum 409
 ZYGOPHYLLACEAE 82
 Zygophyllum 82



GEORGE ALLEN & UNWIN LTD

London : 40 Museum Street, W.C.1

Auckland : 24 Wyndham Street

Sydney, N.S.W. : Bradbury House, 55 York Street

Cape Town : 58-60 Long Street

Bombay : 15 Graham Road, Ballard Estate, Bombay 1

Calcutta : 17 Chittaranjan Avenue, Calcutta 13

New Delhi : 13-14 Ajmere Gate Extension, New Delhi 1

Karachi : Haroon Chambers, South Napier Road, Karachi 2

Toronto : 91 Wellington Street West

Sao Paulo : Avenida 9 de Julho 1138-Ap. 51

by *C. D. Darlington*
CHROMOSOME BOTANY

Cr. 8vo about 12s. 6d. net

In the last twenty years chromosomes have penetrated into every kind of plant study. In his new book, which he begins with a simple account of chromosome behaviour, Professor Darlington reviews the effects of this penetration on genetics and systematics, ecology, plant geography and plant breeding. The effect of this treatment is in a sense to turn the science upside down. All the various branches of botany are seen from a new angle, and it is not surprising that several unexpected evolutionary principles are brought to light. This is especially true of what concerns the origins of species and the origins of cultivated plants. The book will serve as an introduction to a wide range of biological problems. It is illustrated by 36 drawings, diagrams and maps, mostly unpublished.

by *C. D. Darlington and L. F. La Cour*
THE HANDLING OF CHROMOSOMES

Revised Second Edition. Cr. 8vo. 9s. 6d. now—net

The chromosomes are the machinery of organic inheritance and evolution, the chemical organizers of life. In every plant and animal cell they are continually at work controlling and organizing development. Here for the first time is a simple account of how to make them visible. Darlington and La Cour's work is well known in this field of research. Their book will enable teachers in schools and universities to demonstrate chromosomes to their pupils. It describes every stage of the treatment from dissecting an anther or salivary gland to making a camera lucida drawing or microphotograph. Diagrams, schedules, formulae, bibliography and lists of equipment are provided. This book will be indispensable alike in botany and zoology, medicine and agriculture.

'One of the writers of this book has probably done more than any other living man to increase our knowledge of chromosomes, the other has made useful contributions to the technique of studying them. They have collaborated to the advantage of fellow cytologists in preparing this authoritative account.'—*Lancet*.

'This is more than a manual for students. Research workers will find indications as to when and how more elaborate methods should be used. They will also find a most useful bibliography of recent reviews together with much information, some unpublished hitherto, which has never before been collected in a single volume.'—*British Medical Journal*.

by C. D. Darlington and K. Mather

THE ELEMENTS OF GENETICS

Second Impression. Demy 8vo. 30s. net

Genetics has undergone many transformations since it began with the re-discovery of Mendel in 1900. *Drosophila* and the chromosomes, population studies, human heredity and statistical methods, the chemistry of mutations and finally the great revelations of the genetics of micro-organisms have, each of them, meant a revolution in the study of heredity. The last has meant its combination with the study of development and infection also.

The Elements of Genetics by Darlington and Mather represents for the first time the whole length and breadth of this history. It is a concise text book of genetics. But it is written by two workers who in their 15 years' collaboration have done as much as any others to make this new science. It is therefore bound to be a book for the research worker as well as for the student.

There are a great number of new figures, diagrams and tables, and a glossary with the author's definitions of 500 terms gives clarity and precision to the whole work.

'Most stimulating, fascinating for the breadth of its ideas . . . a most important book of lasting value. . . . Packed with information and ideas from which all will profit and it should have the widest of publics.'—*Eugenics Review*.

'Seldom within the confines of a single volume does one find a lucid exposition of a whole discipline. . . . Darlington and Mather understand genetics; they do not merely know it. In this book they have set down in admirably clear language the elements, the ultimate parts of which genetics is made.'—*Biology and Human Affairs*.

by C. H. Waddington

AN INTRODUCTION TO MODERN GENETICS

Demy 8vo. Third Impression. about 30s. net.

'In the interests of genetics and of biology as a whole, we hope that Waddington's book will be widely used.' J. B. S. HALDANE, J. S. HUXLEY, H. J. MULLER in *Nature*.

'An enormous mass of information from many different fields, but his presentation of the various investigations is frequently better and more lucid than that of the original authors.'—*Animal Breeding Extracts*.

by C. D. Darlington
THE FACTS OF LIFE

Demy 8vo. 35s. net

This book begins as a history of man's attempts to discover the facts about himself. It goes on to deal in detail with heredity, sex and reproduction, and with their bearing on the great problems of society, with race, class and mating; with education, health and crime; with evolution and the interpretation of history; and with the never-ending war between superstition and scientific method. The conclusion is a philosophy of determinism which is very old so far as the name goes. But the evidence on which Dr. Darlington bases his argument has been brought together only in the last thirty years. The result is therefore in effect a new philosophy of life.

'The vigour of Darlington's thought, and prose, and the combination of a highly individual point of view with a wide field of scientific knowledge, will, I think, cause this book to be quoted for a long time as an important mid-twentieth century opinion about the cultural influence of biology.'—*Heredity*.

'This is a brilliant and stimulating book. The story of the growth of our knowledge and the defeat of our superstitions and prejudices about human reproduction and heredity has never been better told; and the chapters on the social and historical implications of modern genetics are admirably provocative.'—*Dr. Julian Huxley*.

by C. D. Darlington and K. Mather
GENES, PLANTS AND PEOPLE

Demy 8vo. 16s. net

Here is a collection of essays covering a large part of the field of genetics. They announce the generalizations and hypotheses developed over a period of twenty years during which they have served as some of the main signposts in the astonishing advance of this science. They deal with plants and animals, medicine and agriculture. They offer new interpretations of evolution, development and disease. Indeed they sketch out a rigorous framework of causation which is now being applied to the whole of biology.

Scattered in many journals these essays have long been out of reach to the general reader. Now in compact form they serve as an introduction and as a history of the subject which the two authors have presented with more detail in their *Elements of Genetics*.

by Roger Pilkington
SONS AND DAUGHTERS

Demy 8vo. 18s. net

Sons and Daughters tells the story of the development of the human baby from conception to birth and explains the remarkable and complex events of the early stages of development in simple and non-technical language. The present knowledge of human heredity is clearly stated, and there are sections dealing with the effects of the environment upon characters controlled by genes, the possibility of inducing mutations chemically, and the accuracy with which genetic forecasting of a child's talents and physical features can be done. There are scores of photographs of unusual excellence, and the work is written with a lively humour which marks it as a book of outstanding merit.

'We follow with absorbed interest the growth of the human baby from conception to birth and learn of the remarkable events in the early stages of its development. The factors which determine the physical, mental and emotional entity which is a human being are clearly outlined and the degree to which these can be predicted examined. . . . It brings to a difficult yet momentous subject the illuminating power of a lively enquiring mind.'—*School Government Chronicle*.

by Julian Huxley
EVOLUTION : THE MODERN SYNTHESIS

Fifth Impression. Demy 8vo. 25s. net

It is proclaimed in some quarters that Darwinism is dead. This book by Professor Julian Huxley completely refutes the assertion. Owing to a combination of historical accidents Darwinism suffered an eclipse in the early years of this century: but recent progress in various fields has led to a new synthesis of biological knowledge, which has made it evident that the Darwinian principle of Natural Selection must still be regarded as the main factor in evolutionary change, although recent developments in our knowledge of hereditary constitution have shed new light on the precise method of its operation.

The author deals at some length with these modern developments of Mendelism and their bearings on Evolution, and discusses the general problems of adaptation. A large section of the book is devoted to the various methods by which new species may be formed. In these chapters, data from Systematic zoology and botany and from field natural history have been analysed in the light of modern genetic and evolutionary theory on a scale not hitherto attempted.

' . . . most important book. . . . Dr. Huxley presents a fascinating and extremely complex picture of that fascinating and extremely complex thing called living nature, painted in genes. His picture is essentially dynamic.'—*New Statesman and Nation*.

' . . . there is certainly no more complete and no more satisfactory work on evolution.'

Times Literary Supplement.

LONDON : GEORGE ALLEN AND UNWIN LTD

DATE OF ISSUE

This book must be returned
within 3, 7, 14 days of its issue. A
fine of ONE ANNA per day will
be charged if the book is overdue.

199

77

